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INVESTMENT JUSTIFICATION OF ROBOTIC TECHNOLOGY IN  
AEROSPACE MANUFACTURING

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## EXECUTIVE SUMMARY

This report is the product of a three phase research project entitled "Investment Justification of Robotic Technology in Aerospace Manufacturing". The objective of the project was to develop a microcomputer-based economic analysis methodology suitable for use by U.S. aerospace manufacturers to assess investments in robotics and flexible manufacturing systems.

In Phase I, a nation-wide survey was performed of robotics investment analysis methodologies used or proposed by government, industry, and academia. The survey included discussions with financial, engineering, and management personnel at eight major U.S. aerospace corporations, to determine their needs and constraints, and how a model might best be designed. The Phase I report is available through DTIC—(accession number) AD-A140782.

Phase II was the model development phase. The model was written as a Lotus 1-2-3 template, and is called the "Robotics Investment Decision Model" (RIDM). The Phase II report is also available through DTIC—(accession number) AD-A145467.

Phase III was a review and field test of the model. RIDM was demonstrated to several USAF organizations, and was assessed by a major

U.S. aerospace manufacturer. Internal testing continued, improving RIDM through several format changes, one minor technical change, and adding a few new features. The model is now ready for release to the aerospace industry.

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## I. INTRODUCTION

1. The robotics investment decision model (RIDM) is a tool designed for assessing the economic attractiveness of investments in robotics and/or flexible manufacturing systems (FMS). It models the cash flows generated by such an investment, as compared to the existing method of manufacture or other alternative. Required inputs are the costs under both the robotic/FMS approach (new method) and the existing or old method. Additional inputs are required if the user exercises the option in the model to consider changes in work station throughput or differences in value added at the work station. Model outputs are nominal cash flow, discounted cash flow, internal rate of return, and net present value of the investment at the user-specified discount rate. Before tax and after tax analyses are provided by the model.

2. The model is written as a template for Lotus 1-2-3, one of the popular "electronic spreadsheet" programs. The model was developed on the Zenith Z-100 version of Lotus 1-2-3, Release 1A, running under Z-DOS/MS-DOS release 1.01, version 1.25. To use the model as written, you will need a personal computer which can run Lotus 1-2-3, a disk drive that can read the data diskette on which the model has been installed, and 256 kilobytes of random access memory (RAM). Users with less than 256K RAM can still run the model, but may find it necessary to break it into smaller files. The recommended place for the initial break is just before the after tax analysis section. The model enables the user to specify an analysis period of from 3 to 15 years.

3. Most IBM PC and IBM-compatible personal computers will be able to run Lotus 1-2-3 and read the RIDM data diskette on which the model is stored. The exact software and memory requirements for using the model will depend upon the versions of Lotus 1-2-3 and DOS that your system uses. Newer versions of DOS (Version 2.0) and Lotus (Release 1A) have more features and require more memory than earlier versions. The preferred RAM availability remains 256K.

4. Use of the model requires an intermediate knowledge of Lotus 1-2-3. The model's structure and commands have been kept as simple as possible, to ensure the broadest use throughout industry and to enable the user to modify the model as required to reflect special circumstances of a company or robotic/FMS application. The model contains no range names. All cell references are relative.

5. RIDM assesses the inherent economic attractiveness of robotic/FMS implementation. The model is based on real economic events and not on how those events are accounted for. For example, the cost of robot hardware is considered to be its purchase price (plus shipping, set up, etc.) plus the interest expense for any funds borrowed to make the purchase. An account-based approach would treat the depreciation expense as the cost. RIDM models the true economic return, both before and after taxes. It does not directly model the impact upon company financial statements, as would an account-based approach. However, RIDM is structured in a way which facilitates modifications to perform additional analyses. Although few computer skills are required to effectively use the model, the user should have a good working knowledge of engineering economy concepts such as



discounting, internal rate of return, and net present value.

6. RIDM does not address the multitude of special considerations imposed when doing business with the Federal Government under cost-based contracts. Primary among these are the impacts of government cost accounting standards (CAS) upon cash flows and the impact of cost changes upon prices. The Tech Mod/IMIP Model, recently developed by Logistics Management Institute (and sometimes called the LMI Discounted Cash Flow Model), directly addresses these considerations.

## II. PROGRAM DESCRIPTION

1. This section presents a short description of the Robotics Investment Decision Model. Step-by-step instructions on how to operate the model are presented in the next section.

2. The program software is written as a Lotus 1-2-3 spreadsheet, and a basic working knowledge of Lotus 1-2-3 is prerequisite for using the model. The length of the analysis period (from 3 to 15 years) is specified by the user through a keyboard macro. In response to the user input, the macro automatically constructs the spreadsheet to the desired size, makes required changes to all algorithms, and erases itself when finished to save working memory and disk space. The general structure of the model is in two parts and is summarized below:

### a. Before Tax Analysis

- 1) Old Method Cost Elements
- 2) New Method Cost Elements
- 3) Cash Flow from Investment
- 4) Internal Rate of Return (IRR) and Net Present Value (NPV)
- 5) Production Quantity Adjustment
- 6) Adjustment for Changes in Quality or Value Added
- 7) Summary of Results of Before Tax Analysis

### b. After Tax Analysis

- 1) Computation of Depreciation, Investment Tax Credits,

and Tax Savings for Old Method

2) Computation of Depreciation, Investment Tax Credits,  
and Tax Savings for New Method

3) Summary of Results of After Tax Analysis

3. Each section of the model is described below in more detail.

a. Before Tax Analysis

(1) Old Method Cost Elements

This section is for user inputs on the costs of the existing or baseline manufacturing method.

(2) New Method Cost Elements

This section is for user inputs on the costs of the new or alternative manufacturing method, that is, the robotic or FMS technology.

(3) Cash Flow from Investment

This section is computed by the model. The net cash flow from moving from the old method to the new method is presented for each cost element. The overall net cash flow for each year is also presented.

(4) Internal Rate of Return (IRR) and Net Present Value (NPV)

The model then computes the IRR and NPV of the investment.

(5) Production Quantity Adjustment

This section is optional. It adjusts the cash flow estimates to reflect the differences in throughput (output) between the old and new method. The throughput effect's impact on cash flow is computed by considering the cost per unit of production under each method, and determining how much more or less it would cost under the old method to produce the same amount as under the new method.

(6) Adjustment for Changes in Quality or Value Added

This section is optional. It adjusts the cash flows for the difference in value added at the work station per unit of output.

(7) Summary of Results of Before Tax Analysis

In this section, the model computes and displays the adjusted annual cash flow, cumulative cash flow, adjusted IRR, and NPV of the investment. Annual and cumulative discounted cash flows are also presented. All results reflect before tax conditions.

b. After Tax Analysis

(1) Computation of Depreciation, Investment Tax Credits, and Tax Savings for Old Method

This section of the model computes the depreciation, investment tax credits, and the tax savings from depreciation and non-depreciable business costs for the old method. The required input is the investment schedule for each class of depreciable property. A section is provided for an optional analysis of state and local tax impacts, to be custom designed by the user.

(2) Computation of Depreciation, Investment Tax Credits, and Tax Savings for New Method

This section performs the same function as the previous one, but for the new method. It computes the depreciation, investment tax credits, and the tax savings from depreciation and non-depreciable business costs for the new method. The required input is the investment schedule for each class of depreciable property. A section is provided for an optional analysis of state and local tax impacts, to be custom designed by the user.

(3) Summary of Results of After Tax Analysis

This section computes and displays the annual and cumulative after-tax

cash flow, IRR, NPV, discounted cash flow, and the IRR based on the discounted cash flow.

### III. OPERATING INSTRUCTIONS

#### 1. General Instructions

a. The user first specifies the length of the analysis period by accessing a keyboard macro. He then inputs the costs under the old method of production for each year to be considered, and then does the same for the robotic/FMS approach. A list of recommended cost elements is provided for guidance. The model then computes nominal cash flows, that is, the differences in costs, and the internal rate of return (IRR) and net present value (NPV) of the investment. The user is then provided the option of considering differences in throughput between the two alternative methods. After this, there is an option for considering differences in value added at the workstation per unit of production. The model then performs and displays a summary of the before tax analysis, providing undiscounted and discounted cash flows, IRR, and NPV of the investment at a user-specified discount rate.

b. An after tax analysis is performed next. The user inputs the investment schedule for depreciable property, by asset class, for both the old and new methods. The model computes the investment tax credit and accelerated cost recovery system (ACRS) depreciation for each year, and the federal tax impact upon cash flow, for both the old and new methods. Space is provided for custom-built analyses of state and local income taxes under both old and new methods. The last section is a summary report, providing before tax undiscounted cash flow, and the impact upon cash flow from investment tax credits, depreciation, non-depreciable business costs, and

state and local taxes. After tax cash flow is presented by year, as is cumulative cash flow. The after tax IRR is presented, as is the NPV of the investment at the user-specified discount rate. After tax discounted cash flow is presented by year, and then cumulatively by year, followed by the IRR based on the discounted cash flow.

## 2. Detailed Instructions

### a. Getting Started

(1) After accessing the RIDM program file, the user types in "Alt-A", or its functional equivalent (e.g. "Control-Shift-A" on the Zenith Z-100). This will exercise the macro. A statement will appear on the screen instructing the user to enter the number of years to compute, that is, the desired length of the analysis period. The model can accommodate an analysis period of from 3 to 15 years. After the user enters the number, the model will construct the template to the desired size (desired number of analysis years), and then erase the macro. The new template should be saved as the working file, under a name other than "RIDM".

(2) Modifications should not be made to the RIDM program file. The user should wait until the macro has been exercised and erased before making any changes to the template. If for any reason the user decides to change the contents of the RIDM program file, he must also modify the macros to reflect those changes. Depending on the change, failure to do this can prevent the model from executing or cause egregious errors in the computations.

(3) After the working file has been created, the user is encouraged to make any modifications necessary to suit his preferences for format, to meet specific analysis needs, or to reflect the particular circumstances of the manufacturing application being analyzed. All cell references are relative, allowing the user to add, remove, and modify cells in the template knowing that Lotus 1-2-3 will automatically make the necessary reference changes in the rest of the model. After the user makes all desired modifications, the protection option should be exercised for all cells other than input cells.

(4) The remainder of this chapter addresses each of the major sections of the model.

b. "OLD METHOD COST ELEMENTS" and "NEW METHOD COST ELEMENTS"

(1) The first and most important step in using the model is to input the costs of the two alternative manufacturing approaches (the old method and the new method). A separate area of the spreadsheet is provided for each alternative. Cost elements important for robotics/FMS applications are provided for guidance. The user may wish to change some or all of these to reflect company cost tracking and reporting categories, or special aspects of the manufacturing application. The user should feel free to modify the categories as needed, but should be careful that doing so does not lead to double counting. The yearly cost totals should be checked to ensure this.

(2) For cases where a robotic/FMS technology replaces several work



stations, the appropriate costs from each of the old method work stations should be summed to yield a cell total for the old method. Lotus 1-2-3 allows the user to perform this on the worksheet, within each cell. Lotus 1-2-3 also facilitates extrapolation of costs into the future, since it allows extrapolation formulas to be copied across rows. Cost inputs may be in nominal or constant dollars, depending upon the user's analytic preference. An analysis based on nominal costs best exploits the model's capabilities.

(3) We recommend that the user input all costs for both alternatives. Where costs for the old method and new method are the same, the cells may be left empty without affecting the economic analysis results. However, it will result in a distortion of the per unit cost under each method (the per unit cost difference will not be distorted) and will complicate the running of sensitivity analyses later on.

c. "CASH FLOW FROM INVESTMENT"

(1) The third area on the spreadsheet presents the cash flows that would result from moving from the old method to the new method of manufacture. The cell formulas are "plus OLD METHOD minus NEW METHOD", except for salvage value which is a revenue generator. Therefore, its formula is "plus NEW METHOD minus OLD METHOD". If a cost is higher under the new method than the old, the cash flow is negative. If a cost is lower under the new method, the cash flow is positive. For salvage value, the relationship is reversed. The "CASH FLOW FROM INVESTMENT" table shows the cash flows for individual cost elements, and summarizes them for each year

in the analysis period.

d. "NOMINAL, UNADJUSTED IRR AND NPV"

(1) IRR and NPV are computed and displayed by the model. For the NPV computation, the user may use the default value of 20% for the discount rate or input a preferred rate. The IRR and NPV computed here are based on the nominal, undiscounted, before tax cash flow from the previous section.

e. "PRODUCTION QUANTITY ADJUSTMENT (BEFORE TAX)"

(1) This portion of the model provides the user with the option of considering differences in throughput between the old method and new method. The user exercises this option by entering the throughput for each year of the analysis period, for both the old and new method. The model computes and displays for each year: the change in throughput; the percentage change in throughput; the change in production cost per unit; the percentage change in production cost per unit; and the cash flow as modified by the throughput effect.

f. "ADJUSTMENT FOR CHANGES IN QUALITY OR VALUE ADDED"

(1) After the quantity adjustment option, the user is provided the option of adjusting the cash flows for differences in value added at the work station. Differences in value added might result from doing more or less work at the work station under the new method than under the old method, and/or doing the work in such a way as to yield a higher or lower quality finished or intermediate product. For the user to exercise this option, he must enter for each year the change in value added at the work

station, either positive or negative, which will result from the substitution of the new method for the old method of production. This amount can be determined external to the model, or internally by using a formula that references information already on the spreadsheet. For example, change in value added might be entered as a percentage of production cost per unit, referencing this cell in the previous section.

(2) After completion of the value added adjustment, the model computes and displays: the impact of the value added upon cash flow for each year; the new annual cash flow; and in order to indicate the breakeven period, cumulative cash flow for each year in the analysis period. The IRR is presented next, along with the NPV of the investment. The discount rate for the NPV computation may be entered by the user, or the default value of 20% used. Annual and cumulative discounted cash flows are also presented.

g. "AFTER TAX ANALYSIS"; "COMPUTATION OF DEPRECIATION AND INVESTMENT TAX CREDITS"

(1) In this section, the user first inputs the investment schedule for depreciable property, under both the old and new methods. The user inputs the company's investment in each ACRS class of property (3 year, 5 year, 10 year, and 15 year) for each year of the analysis period. The model computes and displays the investment tax credit, the allowable depreciation for each year, and the resulting tax savings. The only limitation in the depreciation section is that the model assumes all investment in 15 year property (real property) is made within the first three years of the project's life. Space has been left in the spreadsheet,

under both the old and new methods, for the user to perform, at his option, a custom analysis of state and local income tax impacts.

(2) Since the tax code frequently changes, the user is advised to periodically update the depreciation and tax computation formulas. For example, modifications to the tax code in 1984 changed the depreciation period for real property from 15 years to 18 years. As of the time of publication of this report, the Treasury Department had not issued regulations on the yearly percentage write-offs for the new 18 year schedule. When these are issued the model's real property depreciation algorithms should be changed accordingly.

1. "SUMMARY OF AFTER TAX ANALYSIS"

(1) This is the last section of the model, and presents the model's final outputs. It presents a summary of the analysis results and contains the information for comparing the economic attractiveness of the two alternatives, and for selecting the preferred option. It presents for each year of the analysis period the before tax undiscounted cash flow (adjusted for any throughput and quality differences), and the impact upon this cash flow of each of the tax impacts. The after tax IRR is presented, along with the NPV of the investment at the user-specified discount rate.

(2) The model then computes the annual and cumulative discounted after tax cash flows, and the after tax IRR based on the discounted cash flows.

#### IV. APPENDICES

##### Appendix A

##### Sample RIDM Application

ROBOTICS/FMS INVESTMENT  
DECISION MODEL  
(Lotus 1-2-3 FLN:RIDM)

OLD METHOD COST ELEMENTS	OLD METHOD YEAR 1	OLD METHOD YEAR 2	OLD METHOD YEAR 3	OLD METHOD YEAR 4	OLD METHOD YEAR 5
Equipment Purchase					
Equip. Ship. & Install.					
Special Tooling					
Fixtures					
Programming					
Supplies & Material					
Equipment Maintenance	1500	1650	1815	1997	2196
Equipment Repair	5000	5500	6050	6655	7321
Equipment Overhaul			10000		
Facilities Modifications					
Manufacturing Labor	75000	81000	87480	94478	102037
Engineering Labor	1000	1080	1166	1260	1360
Production Control	5000	5400	5832	6299	6802
Shop Supervision					
Material Handling					
Inspection					
Training					
Inventory Costs	10000	10000	10000	10000	10000
Scrap & Rework	15000	15000	15000	15000	15000
Floor Space Costs					
Other MFG. Overhead Costs					
Engineering Overhead					
Administrative Costs					
Property Taxes					
Utilities					
Interest (Cost of borrowed \$)					
Other Expenses					
Equipment Salvage Value					
TOTAL COST, OLD METHOD	\$112,500.00	\$119,630.00	\$137,343.40	\$135,688.17	\$144,716.26

NEW METHOD COST ELEMENTS	NEW METHOD YEAR 1	NEW METHOD YEAR 2	NEW METHOD YEAR 3	NEW METHOD YEAR 4	NEW METHOD YEAR 5
Equipment Purchase	350000				
Equip. Ship. & Install.	50000				
Special Tooling	70000				
Fixtures	10000				
Programming	30000				
Supplies & Material					
Equipment Maintenance	10000	3000	3300	3630	3993
Equipment Repair	5000	3000	3300	3630	3993
Equipment Overhaul					
Facilities Modifications	15000				
Manufacturing Labor	20000	21600	23328	25194	27210
Engineering Labor	2500	2700	2916	3149	3401
Production Control	1000	1080	1166	1260	1360
Shop Supervision					
Material Handling					
Inspection					
Training					
Inventory Costs	3000	3150	3308	3473	3647
Scrap & Rework	3000	3000	3000	3000	3000
Floor Space Costs					
Other MFG. Overhead Costs					
Engineering Overhead					
Administrative Costs					
Property Taxes					
Utilities					
Interest (Cost of borrowed \$)					
Other Expenses					
Equipment Salvage Value	50000				
TOTAL COST, NEW METHOD	\$519,500.00	\$37,530.00	\$40,317.90	\$43,336.11	\$46,604.01

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CASH FLOW FROM INVESTMENT

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Equipment Purchase	-350000	0	0	0	0
Equip. Ship. & Install.	-50000	0	0	0	0
Special Tooling	-70000	0	0	0	0
Fixtures	-10000	0	0	0	0
Programming	-30000	0	0	0	0
Supplies & Material	0	0	0	0	0
Equipment Maintenance	-8500	-1350	-1485	-1634	-1797
Equipment Repair	0	2500	2750	3025	3328
Equipment Overhaul	0	0	10000	0	0
Facilities Modifications	-15000	0	0	0	0
Manufacturing Labor	55000	59400	64152	69284	74827
Engineering Labor	-1500	-1620	-1750	-1890	-2041
Production Control	4000	4320	4666	5039	5442
Shop Supervision	0	0	0	0	0
Material Handling	0	0	0	0	0
Inspection	0	0	0	0	0
Training	0	0	0	0	0
Inventory Costs	7000	6850	6693	6527	6353
Scrap & Rework	12000	12000	12000	12000	12000
Floor Space Costs	0	0	0	0	0
Other MFG. Overhead Costs	0	0	0	0	0
Engineering Overhead	0	0	0	0	0
Administrative Costs	0	0	0	0	0
Property Taxes	0	0	0	0	0
Utilities	0	0	0	0	0
Interest (Cost of borrowed \$)	0	0	0	0	0
Other Expenses	0	0	0	0	0
Equipment Salvage Value	50000	0	0	0	0
NOMINAL CASH FLOW (NCF)	(\$407,000.00)	\$82,100.00	\$97,025.50	\$92,352.07	\$98,112.25

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INTERNAL RATE OF RETURN = -0.04

DISCOUNT RATE = 0.20

NPV OF INVESTMENT= (\$142,037.58)



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PRODUCTION QUANTITY ADJUSTMENT  
(BEFORE TAX)

PRODUCTION QUANTITY, OLD METHOD	OLD METHOD YEAR 1	OLD METHOD YEAR 2	OLD METHOD YEAR 3	OLD METHOD YEAR 4	OLD METHOD YEAR 5
GROSS ANNUAL THROUGHPUT (GAT)	1000	1000	1000	1000	1000
AVERAGE COST PER UNIT(CPU)	\$112.50	\$119.63	\$137.34	\$135.69	\$144.72

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PRODUCTION QUANTITY, NEW METHOD	NEW METHOD YEAR 1	NEW METHOD YEAR 2	NEW METHOD YEAR 3	NEW METHOD YEAR 4	NEW METHOD YEAR 5
GROSS ANNUAL THROUGHPUT (GAT)	300	1250	1250	1250	1250
AVERAGE COST PER UNIT(CPU)	\$1,731.67	\$30.02	\$32.25	\$34.67	\$37.28

-----  
PRODUCTION QUANTITY ADJUSTMENT RESULTS  
NEW METHOD AS COMPARED TO OLD METHOD

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
CHANGE IN GROSS THROUGHPUT	-700	250	250	250	250
% CHANGE IN GROSS THROUGHPUT	-70.0%	25.0%	25.0%	25.0%	25.0%
CHANGE IN PRODUCTION COST/UNIT	\$1,619.17	(\$89.61)	(\$105.09)	(\$101.02)	(\$107.43)
% CHANGE IN PROD COST/UNIT	1439.3%	-74.9%	-76.5%	-74.4%	-74.2%
CASH FLOW AFTER ADJUSTMENT FOR CHANGE IN PROD QUANTITY	(\$485,750.00)	\$112,007.50	\$131,361.35	\$126,274.11	\$134,291.31

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ADJUSTMENT FOR CHANGES IN  
QUALITY OR VALUE ADDED

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
CHANGE IN VALUE ADDED PER UNIT AT THE WORK STATION UNDER NEW METHOD	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CASH FLOW IMPACT OF VAL ADDED	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CASH FLOW, VAL ADDED ADJUSTED	(\$485,750.0)	\$112,007.5	\$131,361.4	\$126,274.1	\$134,291.3
CUM CASH FLOW, VAL ADD ADJUSTED	(\$485,750.0)	(\$373,742.5)	(\$242,381.2)	(\$116,107.0)	\$18,184.3

-----

IRR (ADJUSTED)= 0.01

DISCOUNT RATE = 0.20

NPV OF INVESTMENT (ADJUSTED)= (\$136,124.64)

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	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
DISCOUNTED CASH FLOW (CONTINUOUS DISCOUNTING)	(\$397,698.46)	\$75,080.87	\$72,092.64	\$56,738.61	\$49,403.01
DISCOUNTED CUM. CASH FLOW	(\$397,698.46)	(\$322,617.59)	(\$250,524.95)	(\$193,786.34)	(\$144,383.33)

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AFTER TAX ANALYSIS

COMPUTATION OF DEPRECIATION, INVESTMENT TAX CREDITS, & TAX SAVINGS

INVESTMENT IN DEPRECIABLE ASSETS	OLD METHOD YEAR 1	OLD METHOD YEAR 2	OLD METHOD YEAR 3	OLD METHOD YEAR 4	OLD METHOD YEAR 5
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3 Yr Property (Spec'l. Tooling)

5 Yr. Property (Most Equipt.)

10 Yr Property

15 Yr. Property (facilities)

TOT DEPRECIABLE INVESTMENT	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
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COMPUTE FED INVEST TAX CREDITS:

3 Yr Property	0	0	0	0	0
5 Yr Property	0	0	0	0	0
10 Yr Property	0	0	0	0	0

TOT FED INVESTMENT TAX CREDIT	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
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DEPRECIATION 1ST YR BASIS

3 Yr Property	0	0	0	0	0
5 Yr Property	0	0	0	0	0
10 Yr Property	0	0	0	0	0
15 Yr Property	0	0	0	0	0

COMPUTE ANNUAL DEPRECIATION:

3 Yr Property	0	0	0	0	0
5 Yr Property	0	0	0	0	0
10 Yr Property	0	0	0	0	0
15 Yr Property	0	0	0	0	0

ANNUAL DEPRECIATION	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
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FED TAX SAVINGS FROM DEPREC.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
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FED TAX SAVINGS FROM NON- DEPRECIABLE BUSINESS COSTS	\$15,525.00	\$68,787.25	\$78,972.46	\$78,020.70	\$85,211.85
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	OLD METHOD YEAR 1	OLD METHOD YEAR 2	OLD METHOD YEAR 3	OLD METHOD YEAR 4	OLD METHOD YEAR 5
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STATE & LOCAL INCOME TAXES

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INVESTMENT IN DEPRECIABLE ASSETS	NEW METHOD YEAR 1	NEW METHOD YEAR 2	NEW METHOD YEAR 3	NEW METHOD YEAR 4	NEW METHOD YEAR 5
3 Yr Property (Spec1. Tooling)	70000				
5 Yr. Property (Most Equipt.)	360000				
10 Yr Property					
15 Yr. Property (facilities)	15000				
TOT DEPRECIABLE INVESTMENT	\$445,000.00	\$0.00	\$0.00	\$0.00	\$0.00

COMPUTE FED INVEST TAX CREDITS:

3 Yr Property	4200	0	0	0	0
5 Yr Property	36000	0	0	0	0
10 Yr Property	0	0	0	0	0
TOT FED INVESTMENT TAX CREDIT	\$40,200.00	\$0.00	\$0.00	\$0.00	\$0.00

DEPRECIATION 1ST YR BASIS

3 Yr Property	67900	0	0	0	0
5 Yr Property	342000	0	0	0	0
10 Yr Property	0	0	0	0	0
15 Yr Property	15000	0	0	0	0

COMPUTE ANNUAL DEPRECIATION:

3 Yr Property	16975	25802	25123	0	0
5 Yr Property	51300	75240	71820	71820	71820
10 Yr Property	0	0	0	0	0
15 Yr Property	1800	1500	1350	1200	1050

ANNUAL DEPRECIATION	\$70,075.00	\$102,542.00	\$98,293.00	\$73,020.00	\$72,870.00
FED TAX SAVINGS FROM DEPREC.	\$32,234.50	\$47,169.32	\$45,214.78	\$33,589.20	\$33,520.20
FED TAX SAVINGS FROM NON- DEPRECIABLE BUSINESS COSTS	\$34,270.00	\$17,263.80	\$18,546.23	\$19,934.61	\$21,437.84

	NEW METHOD YEAR 1	NEW METHOD YEAR 2	NEW METHOD YEAR 3	NEW METHOD YEAR 4	NEW METHOD YEAR 5
STATE & LOCAL INCOME TAXES					

SUMMARY OF AFTER TAX ANALYSIS:

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
UNDISC. CASH FLOW (BEF TAX)	(\$485,750.00)	\$112,007.50	\$131,361.35	\$126,274.11	\$134,291.31
ADJUSTMENTS TO CASH FLOW FROM TAX IMPACTS:					
NON-DEPRECIABLE BUSINESS COSTS	\$18,745.00	(\$51,523.45)	(\$60,426.22)	(\$58,086.09)	(\$61,774.00)
INVESTMENT TAX CREDIT	\$40,200.00	\$0.00	\$0.00	\$0.00	\$0.00
DEPRECIATION DEDUCTIONS	\$32,234.50	\$47,169.32	\$45,214.78	\$33,589.20	\$33,520.20
STATE & LOCAL TAXES	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AFTER TAX CASH FLOW (UNDISC)	(\$394,570.50)	\$107,653.37	\$116,149.91	\$101,777.22	\$106,037.51
AFTER TAX CASH FLOW CUMULATIVE (UNDISC)	(\$394,570.50)	(\$286,917.13)	(\$170,767.22)	(\$68,990.00)	\$37,047.50
INTERNAL RATE OF RETURN (AFTER TAX, UNDISC)	0.037				

DISCOUNTED CASH FLOW ANALYSIS:

DISCOUNT RATE: 0.20

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
AFTER TAX DISCOUNTED CASH FLOW (CONTINUOUS DISCOUNTING)	(\$323,047.00)	\$72,162.21	\$63,744.42	\$45,731.45	\$39,009.02
CUMULATIVE DISCOUNTED CASH FLOW, AFTER TAX, CON'T DISC	(\$323,047.00)	(\$250,884.79)	(\$187,140.37)	(\$141,408.92)	(\$102,355.90)
INTERNAL RATE OF RETURN (AFTER TAX, DISCOUNTED)	-0.151				

Appendix B  
Program Listing

A1: U "ROBOTICS/FMS INVESTMENT  
 B1: "  
 A2: U "DECISION MODEL  
 A3: U "(Lotus 1-2-3 FLN:RIDM)  
 A8: U "OLD METHOD  
 B8: U "OLD METHOD  
 C8: U "OLD METHOD  
 D8: U "OLD METHOD  
 E8: U "OLD METHOD  
 F8: U "OLD METHOD  
 G8: U "OLD METHOD  
 H8: U "OLD METHOD  
 I8: U "OLD METHOD  
 J8: U "OLD METHOD  
 K8: U "OLD METHOD  
 L8: U "OLD METHOD  
 M8: U "OLD METHOD  
 N8: U "OLD METHOD  
 O8: U "OLD METHOD  
 P8: U "OLD METHOD  
 A9: U "COST ELEMENTS  
 B9: U "YEAR 1  
 C9: U "YEAR 2  
 D9: U "YEAR 3  
 E9: U "YEAR 4  
 F9: U "YEAR 5  
 G9: U "YEAR 6  
 H9: U "YEAR 7  
 I9: U "YEAR 8  
 J9: U "YEAR 9  
 K9: U "YEAR 10  
 L9: U "YEAR 11  
 M9: U "YEAR 12  
 N9: U "YEAR 13  
 O9: U "YEAR 14  
 P9: U "YEAR 15  
 A11: U "Equipment Purchase  
 A12: U "Equip. Ship. & Install.  
 A13: U "Special Tooling  
 A14: U "Fixtures  
 A15: U "Programming  
 A16: U "Supplies & Material  
 A17: U "Equipment Maintenance  
 A18: U "Equipment Repair  
 A19: U "Equipment Overhaul  
 A20: U "Facilities Modifications  
 A21: U "Manufacturing Labor

A22: U 'Engineering Labor  
 A23: U 'Production Control  
 A24: U 'Shop Supervision  
 A25: U 'Material Handling  
 A26: U 'Inspection  
 A27: U 'Training  
 A28: U 'Inventory Costs  
 A29: U 'Scrap & Rework  
 A30: U 'Floor Space Costs  
 A31: U 'Other MFG. Overhead Costs  
 A32: U 'Engineering Overhead  
 A33: U 'Administrative Costs  
 A34: U 'Property Taxes  
 A35: U 'Utilities  
 A36: U 'Interest (Cost of borrowed \$)  
 A37: U 'Other Expenses  
 A39: U 'Equipment Salvage Value  
 A41: U 'TOTAL COST, OLD METHOD  
 B41: (C2) U @SUM(B37..B11)-B39  
 C41: (C2) U @SUM(C37..C11)-C39  
 D41: (C2) U @SUM(D37..D11)-D39  
 E41: (C2) U @SUM(E37..E11)-E39  
 F41: (C2) U @SUM(F37..F11)-F39  
 G41: (C2) U @SUM(G37..G11)-G39  
 H41: (C2) U @SUM(H37..H11)-H39  
 I41: (C2) U @SUM(I37..I11)-I39  
 J41: (C2) U @SUM(J37..J11)-J39  
 K41: (C2) U @SUM(K37..K11)-K39  
 L41: (C2) U @SUM(L37..L11)-L39  
 M41: (C2) U @SUM(M37..M11)-M39  
 N41: (C2) U @SUM(N37..N11)-N39  
 O41: (C2) U @SUM(O37..O11)-O39  
 P41: (C2) U @SUM(P37..P11)-P39  
 A43: U ' - - - - -  
 B43: U ' - - - - -  
 C43: U ' - - - - -  
 D43: U ' - - - - -  
 E43: U ' - - - - -  
 F43: U ' - - - - -  
 G43: U ' - - - - -  
 H43: U ' - - - - -  
 I43: U ' - - - - -  
 J43: U ' - - - - -  
 K43: U ' - - - - -  
 L43: U ' - - - - -  
 M43: U ' - - - - -  
 N43: U ' - - - - -



O43: U " - - - - -  
 P43: U " - - -  
 A45: U "NEW METHOD  
 B45: U "NEW METHOD  
 C45: U "NEW METHOD  
 D45: U "NEW METHOD  
 E45: U "NEW METHOD  
 F45: U "NEW METHOD  
 G45: U "NEW METHOD  
 H45: U "NEW METHOD  
 I45: U "NEW METHOD  
 J45: U "NEW METHOD  
 K45: U "NEW METHOD  
 L45: U "NEW METHOD  
 M45: U "NEW METHOD  
 N45: U "NEW METHOD  
 O45: U "NEW METHOD  
 P45: U "NEW METHOD  
 A46: U "COST ELEMENTS  
 B46: U "YEAR 1  
 C46: U "YEAR 2  
 D46: U "YEAR 3  
 E46: U "YEAR 4  
 F46: U "YEAR 5  
 G46: U "YEAR 6  
 H46: U "YEAR 7  
 I46: U "YEAR 8  
 J46: U "YEAR 9  
 K46: U "YEAR 10  
 L46: U "YEAR 11  
 M46: U "YEAR 12  
 N46: U "YEAR 13  
 O46: U "YEAR 14  
 P46: U "YEAR 15  
 A48: U "Equipment Purchase  
 A49: U "Equip. Ship. & Install.  
 A50: U "Special Tooling  
 A51: U "Fixtures  
 A52: U "Programming  
 A53: U "Supplies & Material  
 A54: U "Equipment Maintenance  
 A55: U "Equipment Repair  
 A56: U "Equipment Overhaul  
 A57: U "Facilities Modifications  
 A58: U "Manufacturing Labor  
 A59: U "Engineering Labor  
 A60: U "Production Control

A61: U 'Shop Supervision  
 A62: U 'Material Handling  
 A63: U 'Inspection  
 A64: U 'Training  
 A65: U 'Inventory Costs  
 A66: U 'Scrap & Rework  
 A67: U 'Floor Space Costs  
 A68: U 'Other MFG. Overhead Costs  
 A69: U 'Engineering Overhead  
 A70: U 'Administrative Costs  
 A71: U 'Property Taxes  
 A72: U 'Utilities  
 A73: U 'Interest (Cost of borrowed \$)  
 A74: U 'Other Expenses  
 A76: U 'Equipment Salvage Value  
 A78: U 'TOTAL COST, NEW METHOD  
 B78: (C2) U @SUM(B74..B48)-B76  
 C78: (C2) U @SUM(C74..C48)-C76  
 D78: (C2) U @SUM(D74..D48)-D76  
 E78: (C2) U @SUM(E74..E48)-E76  
 F78: (C2) U @SUM(F74..F48)-F76  
 G78: (C2) U @SUM(G74..G48)-G76  
 H78: (C2) U @SUM(H74..H48)-H76  
 I78: (C2) U @SUM(I74..I48)-I76  
 J78: (C2) U @SUM(J74..J48)-J76  
 K78: (C2) U @SUM(K74..K48)-K76  
 L78: (C2) U @SUM(L74..L48)-L76  
 M78: (C2) U @SUM(M74..M48)-M76  
 N78: (C2) U @SUM(N74..N48)-N76  
 O78: (C2) U @SUM(O74..O48)-O76  
 P78: (C2) U @SUM(P74..P48)-P76  
 A80: U \-  
 B80: U \-  
 C80: U \-  
 D80: U \-  
 E80: U \-  
 F80: U \-  
 G80: U \-  
 H80: U \-  
 I80: U \-  
 J80: U \-  
 K80: U \-  
 L80: U \-  
 M80: U \-  
 N80: U \-  
 O80: U \-  
 P80: U \-

A81: U "CASH FLOW FROM INVESTMENT  
 B83: U "YEAR 1  
 C83: U "YEAR 2  
 D83: U "YEAR 3  
 E83: U "YEAR 4  
 F83: U "YEAR 5  
 G83: U "YEAR 6  
 H83: U "YEAR 7  
 I83: U "YEAR 8  
 J83: U "YEAR 9  
 K83: U "YEAR 10  
 L83: U "YEAR 11  
 M83: U "YEAR 12  
 N83: U "YEAR 13  
 O83: U "YEAR 14  
 P83: U "YEAR 15  
 A85: U "Equipment Purchase  
 B85: U +B11-B48  
 C85: U +C11-C48  
 D85: U +D11-D48  
 E85: U +E11-E48  
 F85: U +F11-F48  
 G85: U +G11-G48  
 H85: U +H11-H48  
 I85: U +I11-I48  
 J85: U +J11-J48  
 K85: U +K11-K48  
 L85: U +L11-L48  
 M85: U +M11-M48  
 N85: U +N11-N48  
 O85: U +O11-O48  
 P85: U +P11-P48  
 A86: U "Equip. Ship. & Install.  
 B86: U +B12-B49  
 C86: U +C12-C49  
 D86: U +D12-D49  
 E86: U +E12-E49  
 F86: U +F12-F49  
 G86: U +G12-G49  
 H86: U +H12-H49  
 I86: U +I12-I49  
 J86: U +J12-J49  
 K86: U +K12-K49  
 L86: U +L12-L49  
 M86: U +M12-M49  
 N86: U +N12-N49  
 O86: U +O12-O49

P86: U +P12-P49  
 A87: U 'Special Tooling  
 B87: U +B13-B50  
 C87: U +C13-C50  
 D87: U +D13-D50  
 E87: U +E13-E50  
 F87: U +F13-F50  
 G87: U +G13-G50  
 H87: U +H13-H50  
 I87: U +I13-I50  
 J87: U +J13-J50  
 K87: U +K13-K50  
 L87: U +L13-L50  
 M87: U +M13-M50  
 N87: U +N13-N50  
 O87: U +O13-O50  
 P87: U +P13-P50  
 A88: U 'Fixtures  
 B88: U +B14-B51  
 C88: U +C14-C51  
 D88: U +D14-D51  
 E88: U +E14-E51  
 F88: U +F14-F51  
 G88: U +G14-G51  
 H88: U +H14-H51  
 I88: U +I14-I51  
 J88: U +J14-J51  
 K88: U +K14-K51  
 L88: U +L14-L51  
 M88: U +M14-M51  
 N88: U +N14-N51  
 O88: U +O14-O51  
 P88: U +P14-P51  
 A89: U 'Programming  
 B89: U +B15-B52  
 C89: U +C15-C52  
 D89: U +D15-D52  
 E89: U +E15-E52  
 F89: U +F15-F52  
 G89: U +G15-G52  
 H89: U +H15-H52  
 I89: U +I15-I52  
 J89: U +J15-J52  
 K89: U +K15-K52  
 L89: U +L15-L52  
 M89: U +M15-M52  
 N89: U +N15-N52

089: U +015-052  
 P89: U +P15-P52  
 A90: U 'Supplies & Material  
 B90: U +B16-B53  
 C90: U +C16-C53  
 D90: U +D16-D53  
 E90: U +E16-E53  
 F90: U +F16-F53  
 G90: U +G16-G53  
 H90: U +H16-H53  
 I90: U +I16-I53  
 J90: U +J16-J53  
 K90: U +K16-K53  
 L90: U +L16-L53  
 M90: U +M16-M53  
 N90: U +N16-N53  
 O90: U +O16-O53  
 P90: U +P16-P53  
 A91: U 'Equipment Maintenance  
 B91: U +B17-B54  
 C91: U +C17-C54  
 D91: U +D17-D54  
 E91: U +E17-E54  
 F91: U +F17-F54  
 G91: U +G17-G54  
 H91: U +H17-H54  
 I91: U +I17-I54  
 J91: U +J17-J54  
 K91: U +K17-K54  
 L91: U +L17-L54  
 M91: U +M17-M54  
 N91: U +N17-N54  
 O91: U +O17-O54  
 P91: U +P17-P54  
 A92: U 'Equipment Repair  
 B92: U +B18-B55  
 C92: U +C18-C55  
 D92: U +D18-D55  
 E92: U +E18-E55  
 F92: U +F18-F55  
 G92: U +G18-G55  
 H92: U +H18-H55  
 I92: U +I18-I55  
 J92: U +J18-J55  
 K92: U +K18-K55  
 L92: U +L18-L55  
 M92: U +M18-M55

N92: U +N18-N55  
 O92: U +O18-O55  
 P92: U +P18-P55  
 A93: U \*Equipment Overhaul  
 B93: U +B19-B56  
 C93: U +C19-C56  
 D93: U +D19-D56  
 E93: U +E19-E56  
 F93: U +F19-F56  
 G93: U +G19-G56  
 H93: U +H19-H56  
 I93: U +I19-I56  
 J93: U +J19-J56  
 K93: U +K19-K56  
 L93: U +L19-L56  
 M93: U +M19-M56  
 N93: U +N19-N56  
 O93: U +O19-O56  
 P93: U +P19-P56  
 A94: U \*Facilities Modifications  
 B94: U +B20-B57  
 C94: U +C20-C57  
 D94: U +D20-D57  
 E94: U +E20-E57  
 F94: U +F20-F57  
 G94: U +G20-G57  
 H94: U +H20-H57  
 I94: U +I20-I57  
 J94: U +J20-J57  
 K94: U +K20-K57  
 L94: U +L20-L57  
 M94: U +M20-M57  
 N94: U +N20-N57  
 O94: U +O20-O57  
 P94: U +P20-P57  
 A95: U \*Manufacturing Labor  
 B95: U +B21-B58  
 C95: U +C21-C58  
 D95: U +D21-D58  
 E95: U +E21-E58  
 F95: U +F21-F58  
 G95: U +G21-G58  
 H95: U +H21-H58  
 I95: U +I21-I58  
 J95: U +J21-J58  
 K95: U +K21-K58  
 L95: U +L21-L58

M95: U +M21-M58  
 N95: U +N21-N58  
 O95: U +O21-O58  
 P95: U +P21-P58  
 A96: U 'Engineering Labor  
 B96: U +B22-B59  
 C96: U +C22-C59  
 D96: U +D22-D59  
 E96: U +E22-E59  
 F96: U +F22-F59  
 G96: U +G22-G59  
 H96: U +H22-H59  
 I96: U +I22-I59  
 J96: U +J22-J59  
 K96: U +K22-K59  
 L96: U +L22-L59  
 M96: U +M22-M59  
 N96: U +N22-N59  
 O96: U +O22-O59  
 P96: U +P22-P59  
 A97: U 'Production Control  
 B97: U +B23-B60  
 C97: U +C23-C60  
 D97: U +D23-D60  
 E97: U +E23-E60  
 F97: U +F23-F60  
 G97: U +G23-G60  
 H97: U +H23-H60  
 I97: U +I23-I60  
 J97: U +J23-J60  
 K97: U +K23-K60  
 L97: U +L23-L60  
 M97: U +M23-M60  
 N97: U +N23-N60  
 O97: U +O23-O60  
 P97: U +P23-P60  
 A98: U 'Shop Supervision  
 B98: U +B24-B61  
 C98: U +C24-C61  
 D98: U +D24-D61  
 E98: U +E24-E61  
 F98: U +F24-F61  
 G98: U +G24-G61  
 H98: U +H24-H61  
 I98: U +I24-I61  
 J98: U +J24-J61  
 K98: U +K24-K61

L98: U +L24-L61  
 M98: U +M24-M61  
 N98: U +N24-N61  
 O98: U +O24-O61  
 P98: U +P24-P61  
 A99: U 'Material Handling  
 B99: U +B25-B62  
 C99: U +C25-C62  
 D99: U +D25-D62  
 E99: U +E25-E62  
 F99: U +F25-F62  
 G99: U +G25-G62  
 H99: U +H25-H62  
 I99: U +I25-I62  
 J99: U +J25-J62  
 K99: U +K25-K62  
 L99: U +L25-L62  
 M99: U +M25-M62  
 N99: U +N25-N62  
 O99: U +O25-O62  
 P99: U +P25-P62  
 A100: U 'Inspection  
 B100: U +B26-B63  
 C100: U +C26-C63  
 D100: U +D26-D63  
 E100: U +E26-E63  
 F100: U +F26-F63  
 G100: U +G26-G63  
 H100: U +H26-H63  
 I100: U +I26-I63  
 J100: U +J26-J63  
 K100: U +K26-K63  
 L100: U +L26-L63  
 M100: U +M26-M63  
 N100: U +N26-N63  
 O100: U +O26-O63  
 P100: U +P26-P63  
 A101: U 'Training  
 B101: U +B27-B64  
 C101: U +C27-C64  
 D101: U +D27-D64  
 E101: U +E27-E64  
 F101: U +F27-F64  
 G101: U +G27-G64  
 H101: U +H27-H64  
 I101: U +I27-I64  
 J101: U +J27-J64



K101: U +K27-K64  
 L101: U +L27-L64  
 M101: U +M27-M64  
 N101: U +N27-N64  
 O101: U +O27-O64  
 P101: U +P27-P64  
 A102: U 'Inventory Costs  
 B102: U +B28-B65  
 C102: U +C28-C65  
 D102: U +D28-D65  
 E102: U +E28-E65  
 F102: U +F28-F65  
 G102: U +G28-G65  
 H102: U +H28-H65  
 I102: U +I28-I65  
 J102: U +J28-J65  
 K102: U +K28-K65  
 L102: U +L28-L65  
 M102: U +M28-M65  
 N102: U +N28-N65  
 O102: U +O28-O65  
 P102: U +P28-P65  
 A103: U 'Scrap & Rework  
 B103: U +B29-B66  
 C103: U +C29-C66  
 D103: U +D29-D66  
 E103: U +E29-E66  
 F103: U +F29-F66  
 G103: U +G29-G66  
 H103: U +H29-H66  
 I103: U +I29-I66  
 J103: U +J29-J66  
 K103: U +K29-K66  
 L103: U +L29-L66  
 M103: U +M29-M66  
 N103: U +N29-N66  
 O103: U +O29-O66  
 P103: U +P29-P66  
 A104: U 'Floor Space Costs  
 B104: U +B30-B67  
 C104: U +C30-C67  
 D104: U +D30-D67  
 E104: U +E30-E67  
 F104: U +F30-F67  
 G104: U +G30-G67  
 H104: U +H30-H67  
 I104: U +I30-I67

J104: U +J30-J67  
 K104: U +K30-K67  
 L104: U +L30-L67  
 M104: U +M30-M67  
 N104: U +N30-N67  
 O104: U +O30-O67  
 P104: U +P30-P67  
 A105: U \*Other MFG. Overhead Costs  
 B105: U +B31-B68  
 C105: U +C31-C68  
 D105: U +D31-D68  
 E105: U +E31-E68  
 F105: U +F31-F68  
 G105: U +G31-G68  
 H105: U +H31-H68  
 I105: U +I31-I68  
 J105: U +J31-J68  
 K105: U +K31-K68  
 L105: U +L31-L68  
 M105: U +M31-M68  
 N105: U +N31-N68  
 O105: U +O31-O68  
 P105: U +P31-P68  
 A106: U \*Engineering Overhead  
 B106: U +B32-B69  
 C106: U +C32-C69  
 D106: U +D32-D69  
 E106: U +E32-E69  
 F106: U +F32-F69  
 G106: U +G32-G69  
 H106: U +H32-H69  
 I106: U +I32-I69  
 J106: U +J32-J69  
 K106: U +K32-K69  
 L106: U +L32-L69  
 M106: U +M32-M69  
 N106: U +N32-N69  
 O106: U +O32-O69  
 P106: U +P32-P69  
 A107: U \*Administrative Costs  
 B107: U +B33-B70  
 C107: U +C33-C70  
 D107: U +D33-D70  
 E107: U +E33-E70  
 F107: U +F33-F70  
 G107: U +G33-G70  
 H107: U +H33-H70

I107: U +I33-I70  
 J107: U +J33-J70  
 K107: U +K33-K70  
 L107: U +L33-L70  
 M107: U +M33-M70  
 N107: U +N33-N70  
 O107: U +O33-O70  
 P107: U +P33-P70  
 A108: U \*Property Taxes  
 B108: U +B34-B71  
 C108: U +C34-C71  
 D108: U +D34-D71  
 E108: U +E34-E71  
 F108: U +F34-F71  
 G108: U +G34-G71  
 H108: U +H34-H71  
 I108: U +I34-I71  
 J108: U +J34-J71  
 K108: U +K34-K71  
 L108: U +L34-L71  
 M108: U +M34-M71  
 N108: U +N34-N71  
 O108: U +O34-O71  
 P108: U +P34-P71  
 A109: U \*Utilities  
 B109: U +B35-B72  
 C109: U +C35-C72  
 D109: U +D35-D72  
 E109: U +E35-E72  
 F109: U +F35-F72  
 G109: U +G35-G72  
 H109: U +H35-H72  
 I109: U +I35-I72  
 J109: U +J35-J72  
 K109: U +K35-K72  
 L109: U +L35-L72  
 M109: U +M35-M72  
 N109: U +N35-N72  
 O109: U +O35-O72  
 P109: U +P35-P72  
 A110: U \*Interest (Cost of borrowed \$)  
 B110: U +B36-B73  
 C110: U +C36-C73  
 D110: U +D36-D73  
 E110: U +E36-E73  
 F110: U +F36-F73  
 G110: U +G36-G73

G115: (C2) U +G41-G78  
 H115: (C2) U +H41-H78  
 I115: (C2) U +I41-I78  
 J115: (C2) U +J41-J78  
 K115: (C2) U +K41-K78  
 L115: (C2) U +L41-L78  
 M115: (C2) U +M41-M78  
 N115: (C2) U +N41-N78  
 O115: (C2) U +O41-O78  
 P115: (C2) U +P41-P78  
 A117: U \-  
 B117: U \-  
 C117: U \-  
 D117: U \-  
 E117: U \-  
 F117: U \-  
 G117: U \-  
 H117: U \-  
 I117: U \-  
 J117: U \-  
 K117: U \-  
 L117: U \-  
 M117: U \-  
 N117: U \-  
 O117: U \-  
 P117: U \-  
 A119: U \*INTERNAL RATE OF RETURN =  
 B119: (F2) U @IRR(0.4,B115..P115)  
 A121: U \*DISCOUNT RATE =  
 B121: (F2) U 0.2  
 A123: U \*NPV OF INVESTMENT=  
 B123: (C2) U @NPV(B121,B115..P115)  
 A125: U \-  
 B125: U \-  
 C125: U \-  
 D125: U \-  
 E125: U \-  
 F125: U \-  
 G125: U \-  
 H125: U \-  
 I125: U \-  
 J125: U \-  
 K125: U \-  
 L125: U \-  
 M125: U \-  
 N125: U \-  
 O125: U \-

P125: U \-  
 A126: U \*PRODUCTION QUANTITY ADJUSTMENT  
 A127: U \*(BEFORE TAX)  
 A130: U \*PRODUCTION QUANTITY, OLD  
 B130: U "OLD METHOD  
 C130: U "OLD METHOD  
 D130: U "OLD METHOD  
 E130: U "OLD METHOD  
 F130: U "OLD METHOD  
 G130: U "OLD METHOD  
 H130: U "OLD METHOD  
 I130: U "OLD METHOD  
 J130: U "OLD METHOD  
 K130: U "OLD METHOD  
 L130: U "OLD METHOD  
 M130: U "OLD METHOD  
 N130: U "OLD METHOD  
 O130: U "OLD METHOD  
 P130: U "OLD METHOD  
 A131: U \*METHOD  
 B131: U "YEAR 1  
 C131: U "YEAR 2  
 D131: U "YEAR 3  
 E131: U "YEAR 4  
 F131: U "YEAR 5  
 G131: U "YEAR 6  
 H131: U "YEAR 7  
 I131: U "YEAR 8  
 J131: U "YEAR 9  
 K131: U "YEAR 10  
 L131: U "YEAR 11  
 M131: U "YEAR 12  
 N131: U "YEAR 13  
 O131: U "YEAR 14  
 P131: U "YEAR 15  
 A133: U \*GROSS ANNUAL THROUGHPUT (GAT)  
 A135: U \*AVERAGE COST PER UNIT(CPU)  
 B135: (C2) U +B41/+B133  
 C135: (C2) U +C41/+C133  
 D135: (C2) U +D41/+D133  
 E135: (C2) U +E41/+E133  
 F135: (C2) U +F41/+F133  
 G135: (C2) U +G41/+G133  
 H135: (C2) U +H41/+H133  
 I135: (C2) U +I41/+I133  
 J135: (C2) U +J41/+J133  
 K135: (C2) U +K41/+K133

L135: (C2) U +L41/+L133  
 M135: (C2) U +M41/+M133  
 N135: (C2) U +N41/+N133  
 O135: (C2) U +O41/+O133  
 P135: (C2) U +P41/+P133  
 A137: U \ -  
 B137: U \ -  
 C137: U \ -  
 D137: U \ -  
 E137: U \ -  
 F137: U \ -  
 G137: U \ -  
 H137: U \ -  
 I137: U \ -  
 J137: U \ -  
 K137: U \ -  
 L137: U \ -  
 M137: U \ -  
 N137: U \ -  
 O137: U \ -  
 P137: U \ -  
 A139: U 'PRODUCTION QUANTITY, NEW  
 B139: U "NEW METHOD  
 C139: U "NEW METHOD  
 D139: U "NEW METHOD  
 E139: U "NEW METHOD  
 F139: U "NEW METHOD  
 G139: U "NEW METHOD  
 H139: U "NEW METHOD  
 I139: U "NEW METHOD  
 J139: U "NEW METHOD  
 K139: U "NEW METHOD  
 L139: U "NEW METHOD  
 M139: U "NEW METHOD  
 N139: U "NEW METHOD  
 O139: U "NEW METHOD  
 P139: U "NEW METHOD  
 A140: U 'METHOD  
 B140: U "YEAR 1  
 C140: U "YEAR 2  
 D140: U "YEAR 3  
 E140: U "YEAR 4  
 F140: U "YEAR 5  
 G140: U "YEAR 6  
 H140: U "YEAR 7  
 I140: U "YEAR 8  
 J140: U "YEAR 9

K140: U "YEAR 10  
 L140: U "YEAR 11  
 M140: U "YEAR 12  
 N140: U "YEAR 13  
 O140: U "YEAR 14  
 P140: U "YEAR 15  
 A142: U "GROSS ANNUAL THROUGHPUT (GAT)  
 A144: U "AVERAGE COST PER UNIT(CPU)  
 B144: (C2) U +B78/+B142  
 C144: (C2) U +C78/+C142  
 D144: (C2) U +D78/+D142  
 E144: (C2) U +E78/+E142  
 F144: (C2) U +F78/+F142  
 G144: (C2) U +G78/+G142  
 H144: (C2) U +H78/+H142  
 I144: (C2) U +I78/+I142  
 J144: (C2) U +J78/+J142  
 K144: (C2) U +K78/+K142  
 L144: (C2) U +L78/+L142  
 M144: (C2) U +M78/+M142  
 N144: (C2) U +N78/+N142  
 O144: (C2) U +O78/+O142  
 P144: (C2) U +P78/+P142  
 A146: U \-  
 B146: U \-  
 C146: U \-  
 D146: U \-  
 E146: U \-  
 F146: U \-  
 G146: U \-  
 H146: U \-  
 I146: U \-  
 J146: U \-  
 K146: U \-  
 L146: U \-  
 M146: U \-  
 N146: U \-  
 O146: U \-  
 P146: U \-  
 A147: U "PRODUCTION QUANTITY ADJUSTMENT RESULTS  
 A148: U "NEW METHOD AS COMPARED TO OLD METHOD  
 B151: U "YEAR 1  
 C151: U "YEAR 2  
 D151: U "YEAR 3  
 E151: U "YEAR 4  
 F151: U "YEAR 5  
 G151: U "YEAR 6

H151: U "YEAR 7  
 I151: U "YEAR 8  
 J151: U "YEAR 9  
 K151: U "YEAR 10  
 L151: U "YEAR 11  
 M151: U "YEAR 12  
 N151: U "YEAR 13  
 O151: U "YEAR 14  
 P151: U "YEAR 15  
 A153: U "CHANGE IN GROSS THROUGHPUT  
 B153: U +B142-B133  
 C153: U +C142-C133  
 D153: U +D142-D133  
 E153: U +E142-E133  
 F153: U +F142-F133  
 G153: U +G142-G133  
 H153: U +H142-H133  
 I153: U +I142-I133  
 J153: U +J142-J133  
 K153: U +K142-K133  
 L153: U +L142-L133  
 M153: U +M142-M133  
 N153: U +N142-N133  
 O153: U +O142-O133  
 P153: U +P142-P133  
 A155: U "% CHANGE IN GROSS THROUGHPUT  
 B155: (P1) U +B153/B133  
 C155: (P1) U +C153/C133  
 D155: (P1) U +D153/D133  
 E155: (P1) U +E153/E133  
 F155: (P1) U +F153/F133  
 G155: (P1) U +G153/G133  
 H155: (P1) U +H153/H133  
 I155: (P1) U +I153/I133  
 J155: (P1) U +J153/J133  
 K155: (P1) U +K153/K133  
 L155: (P1) U +L153/L133  
 M155: (P1) U +M153/M133  
 N155: (P1) U +N153/N133  
 O155: (P1) U +O153/O133  
 P155: (P1) U +P153/P133  
 A157: U "CHANGE IN PRODUCTION COST/UNIT  
 B157: (C2) U +B144-B135  
 C157: (C2) U +C144-C135  
 D157: (C2) U +D144-D135  
 E157: (C2) U +E144-E135  
 F157: (C2) U +F144-F135



G157: (C2) U +G144-G135  
 H157: (C2) U +H144-H135  
 I157: (C2) U +I144-I135  
 J157: (C2) U +J144-J135  
 K157: (C2) U +K144-K135  
 L157: (C2) U +L144-L135  
 M157: (C2) U +M144-M135  
 N157: (C2) U +N144-N135  
 O157: (C2) U +O144-O135  
 P157: (C2) U +P144-P135  
 A159: U % CHANGE IN PROD COST/UNIT  
 B159: (P1) U (+B157/B135)  
 C159: (P1) U (+C157/C135)  
 D159: (P1) U (+D157/D135)  
 E159: (P1) U (+E157/E135)  
 F159: (P1) U (+F157/F135)  
 G159: (P1) U (+G157/G135)  
 H159: (P1) U (+H157/H135)  
 I159: (P1) U (+I157/I135)  
 J159: (P1) U (+J157/J135)  
 K159: (P1) U (+K157/K135)  
 L159: (P1) U (+L157/L135)  
 M159: (P1) U (+M157/M135)  
 N159: (P1) U (+N157/N135)  
 O159: (P1) U (+O157/O135)  
 P159: (P1) U (+P157/P135)  
 A161: U CASH FLOW AFTER ADJUSTMENT  
 B161: (C2) U -1\*(+B142\*B157)  
 C161: (C2) U -1\*(+C142\*C157)  
 D161: (C2) U -1\*(+D142\*D157)  
 E161: (C2) U -1\*(+E142\*E157)  
 F161: (C2) U -1\*(+F142\*F157)  
 G161: (C2) U -1\*(+G142\*G157)  
 H161: (C2) U -1\*(+H142\*H157)  
 I161: (C2) U -1\*(+I142\*I157)  
 J161: (C2) U -1\*(+J142\*J157)  
 K161: (C2) U -1\*(+K142\*K157)  
 L161: (C2) U -1\*(+L142\*L157)  
 M161: (C2) U -1\*(+M142\*M157)  
 N161: (C2) U -1\*(+N142\*N157)  
 O161: (C2) U -1\*(+O142\*O157)  
 P161: (C2) U -1\*(+P142\*P157)  
 A162: U FOR CHANGE IN PROD QUANTITY  
 A164: U \-  
 B164: U \-  
 C164: U \-  
 D164: U \-

E164: U \-  
 F164: U \-  
 G164: U \-  
 H164: U \-  
 I164: U \-  
 J164: U \-  
 K164: U \-  
 L164: U \-  
 M164: U \-  
 N164: U \-  
 O164: U \-  
 P164: U \-  
 A165: U \*ADJUSTMENT FOR CHANGES IN  
 A166: U \*QUALITY OR VALUE ADDED  
 B168: U "YEAR 1  
 C168: U "YEAR 2  
 D168: U "YEAR 3  
 E168: U "YEAR 4  
 F168: U "YEAR 5  
 G168: U "YEAR 6  
 H168: U "YEAR 7  
 I168: U "YEAR 8  
 J168: U "YEAR 9  
 K168: U "YEAR 10  
 L168: U "YEAR 11  
 M168: U "YEAR 12  
 N168: U "YEAR 13  
 O168: U "YEAR 14  
 P168: U "YEAR 15  
 A170: U \*CHANGE IN VALUE ADDED PER  
 A171: U \*UNIT AT THE WORK STATION  
 A172: U \*UNDER NEW METHOD  
 A174: U \*CASH FLOW IMPACT OF VAL ADDED  
 B174: (C2) U +B170\*B142  
 C174: (C2) U +C170\*C142  
 D174: (C2) U +D170\*D142  
 E174: (C2) U +E170\*E142  
 F174: (C2) U +F170\*F142  
 G174: (C2) U +G170\*G142  
 H174: (C2) U +H170\*H142  
 I174: (C2) U +I170\*I142  
 J174: (C2) U +J170\*J142  
 K174: (C2) U +K170\*K142  
 L174: (C2) U +L170\*L142  
 M174: (C2) U +M170\*M142  
 N174: (C2) U +N170\*N142  
 O174: (C2) U +O170\*O142

P174: (C2) U +P170\*P142  
 A176: U \*CASH FLOW, VAL ADDED ADJUSTED  
 B176: (C1) U +B174+B161  
 C176: (C1) U +C174+C161  
 D176: (C1) U +D174+D161  
 E176: (C1) U +E174+E161  
 F176: (C1) U +F174+F161  
 G176: (C1) U +G174+G161  
 H176: (C1) U +H174+H161  
 I176: (C1) U +I174+I161  
 J176: (C1) U +J174+J161  
 K176: (C1) U +K174+K161  
 L176: (C1) U +L174+L161  
 M176: (C1) U +M174+M161  
 N176: (C1) U +N174+N161  
 O176: (C1) U +O174+O161  
 P176: (C1) U +P174+P161  
 A178: U \*CUM CASH FLOW, VAL ADD ADJUSTED  
 B178: (C1) U +B176  
 C178: (C1) U @SUM(B178,C176)  
 D178: (C1) U @SUM(C178,D176)  
 E178: (C1) U @SUM(D178,E176)  
 F178: (C1) U @SUM(E178,F176)  
 G178: (C1) U @SUM(F178,G176)  
 H178: (C1) U @SUM(G178,H176)  
 I178: (C1) U @SUM(H178,I176)  
 J178: (C1) U @SUM(I178,J176)  
 K178: (C1) U @SUM(J178,K176)  
 L178: (C1) U @SUM(K178,L176)  
 M178: (C1) U @SUM(L178,M176)  
 N178: (C1) U @SUM(M178,N176)  
 O178: (C1) U @SUM(N178,O176)  
 P178: (C1) U @SUM(O178,P176)  
 A179: U \-  
 B179: U \-  
 C179: U \-  
 D179: U \-  
 E179: U \-  
 F179: U \-  
 G179: U \-  
 H179: U \-  
 I179: U \-  
 J179: U \-  
 K179: U \-  
 L179: U \-  
 M179: U \-  
 N179: U \-

O179: U \-  
 P179: U \-  
 A181: U "IRR (ADJUSTED)=  
 B181: (F2) U @IRR(0.4,B176..P176)  
 A183: U "DISCOUNT RATE =  
 B183: (F2) U 0.2  
 A185: U "NPV OF INVESTMENT (ADJUSTED)=  
 B185: (C2) U @NPV(B183,B176..P176)  
 A187: U \-  
 B187: U \-  
 C187: U \-  
 D187: U \-  
 E187: U \-  
 F187: U \-  
 G187: U \-  
 H187: U \-  
 I187: U \-  
 J187: U \-  
 K187: U \-  
 L187: U \-  
 M187: U \-  
 N187: U \-  
 O187: U \-  
 P187: U \-  
 B189: U "YEAR 1  
 C189: U "YEAR 2  
 D189: U "YEAR 3  
 E189: U "YEAR 4  
 F189: U "YEAR 5  
 G189: U "YEAR 6  
 H189: U "YEAR 7  
 I189: U "YEAR 8  
 J189: U "YEAR 9  
 K189: U "YEAR 10  
 L189: U "YEAR 11  
 M189: U "YEAR 12  
 N189: U "YEAR 13  
 O189: U "YEAR 14  
 P189: U "YEAR 15  
 A191: U "DISCOUNTED CASH FLOW  
 B191: (C2) U @EXP(-B183\*1)\*B176  
 C191: (C2) U @EXP(-B183\*2)\*C176  
 D191: (C2) U @EXP(-B183\*3)\*D176  
 E191: (C2) U @EXP(-B183\*4)\*E176  
 F191: (C2) U @EXP(-B183\*5)\*F176  
 G191: (C2) U @EXP(-B183\*6)\*G176  
 H191: (C2) U @EXP(-B183\*7)\*H176

I191: (C2) U @EXP(-B183\*8)\*I176  
 J191: (C2) U @EXP(-B183\*9)\*J176  
 K191: (C2) U @EXP(-B183\*10)\*K176  
 L191: (C2) U @EXP(-B183\*11)\*L176  
 M191: (C2) U @EXP(-B183\*12)\*M176  
 N191: (C2) U @EXP(-B183\*13)\*N176  
 O191: (C2) U @EXP(-B183\*14)\*O176  
 P191: (C2) U @EXP(-B183\*15)\*P176  
 A192: U \*(CONTINUOUS DISCOUNTING)  
 A194: U \*DISCOUNTED CUM. CASH FLOW  
 B194: (C2) U +B191  
 C194: (C2) U +B194+C191  
 D194: (C2) U +C194+D191  
 E194: (C2) U +D194+E191  
 F194: (C2) U +E194+F191  
 G194: (C2) U +F194+G191  
 H194: (C2) U +G194+H191  
 I194: (C2) U +H194+I191  
 J194: (C2) U +I194+J191  
 K194: (C2) U +J194+K191  
 L194: (C2) U +K194+L191  
 M194: (C2) U +L194+M191  
 N194: (C2) U +M194+N191  
 O194: (C2) U +N194+O191  
 P194: (C2) U +O194+P191  
 A196: U \-  
 B196: U \-  
 C196: U \-  
 D196: U \-  
 E196: U \-  
 F196: U \-  
 G196: U \-  
 H196: U \-  
 I196: U \-  
 J196: U \-  
 K196: U \-  
 L196: U \-  
 M196: U \-  
 N196: U \-  
 O196: U \-  
 P196: U \-  
 A197: U \*AFTER TAX ANALYSIS  
 A200: U \*COMPUTATION OF DEPRECIATION, INVESTMENT TAX CREDITS, & TAX SAVIN  
 A202: U \*INVESTMENT IN DEPRECIABLE  
 B202: U "OLD METHOD  
 C202: U "OLD METHOD  
 D202: U "OLD METHOD

E202: U "OLD METHOD  
 F202: U "OLD METHOD  
 G202: U "OLD METHOD  
 H202: U "OLD METHOD  
 I202: U "OLD METHOD  
 J202: U "OLD METHOD  
 K202: U "OLD METHOD  
 L202: U "OLD METHOD  
 M202: U "OLD METHOD  
 N202: U "OLD METHOD  
 O202: U "OLD METHOD  
 P202: U "OLD METHOD  
 A203: U "ASSETS  
 B203: U "YEAR 1  
 C203: U "YEAR 2  
 D203: U "YEAR 3  
 E203: U "YEAR 4  
 F203: U "YEAR 5  
 G203: U "YEAR 6  
 H203: U "YEAR 7  
 I203: U "YEAR 8  
 J203: U "YEAR 9  
 K203: U "YEAR 10  
 L203: U "YEAR 11  
 M203: U "YEAR 12  
 N203: U "YEAR 13  
 O203: U "YEAR 14  
 P203: U "YEAR 15  
 A205: U "3 Yr Property (Speci. Tooling)  
 A206: U "5 Yr. Property (Most Equipt.)  
 A207: U "10 Yr Property  
 A208: U "15 Yr. Property (facilities)  
 A210: U "TOT DEPRECIABLE INVESTMENT  
 B210: (C2) U @SUM(B205..B208)  
 C210: (C2) U @SUM(C205..C208)  
 D210: (C2) U @SUM(D205..D208)  
 E210: (C2) U @SUM(E205..E208)  
 F210: (C2) U @SUM(F205..F208)  
 G210: (C2) U @SUM(G205..G208)  
 H210: (C2) U @SUM(H205..H208)  
 I210: (C2) U @SUM(I205..I208)  
 J210: (C2) U @SUM(J205..J208)  
 K210: (C2) U @SUM(K205..K208)  
 L210: (C2) U @SUM(L205..L208)  
 M210: (C2) U @SUM(M205..M208)  
 N210: (C2) U @SUM(N205..N208)  
 O210: (C2) U @SUM(O205..O208)

F210: (C2) U @SUM(P205..P208)  
 A212: U 'COMPUTE FED INVEST TAX CREDITS:  
 A214: U '3 Yr Property  
 B214: U 0.06\*B205  
 C214: U 0.06\*C205  
 D214: U 0.06\*D205  
 E214: U 0.06\*E205  
 F214: U 0.06\*F205  
 G214: U 0.06\*G205  
 H214: U 0.06\*H205  
 I214: U 0.06\*I205  
 J214: U 0.06\*J205  
 K214: U 0.06\*K205  
 L214: U 0.06\*L205  
 M214: U 0.06\*M205  
 N214: U 0.06\*N205  
 O214: U 0.06\*O205  
 P214: U 0.06\*P205  
 A215: U '5 Yr Property  
 B215: U 0.1\*B206  
 C215: U 0.1\*C206  
 D215: U 0.1\*D206  
 E215: U 0.1\*E206  
 F215: U 0.1\*F206  
 G215: U 0.1\*G206  
 H215: U 0.1\*H206  
 I215: U 0.1\*I206  
 J215: U 0.1\*J206  
 K215: U 0.1\*K206  
 L215: U 0.1\*L206  
 M215: U 0.1\*M206  
 N215: U 0.1\*N206  
 O215: U 0.1\*O206  
 P215: U 0.1\*P206  
 A216: U '10 Yr Property  
 B216: U 0.1\*B207  
 C216: U 0.1\*C207  
 D216: U 0.1\*D207  
 E216: U 0.1\*E207  
 F216: U 0.1\*F207  
 G216: U 0.1\*G207  
 H216: U 0.1\*H207  
 I216: U 0.1\*I207  
 J216: U 0.1\*J207  
 K216: U 0.1\*K207  
 L216: U 0.1\*L207  
 M216: U 0.1\*M207

N216: U 0.1\*N207  
 O216: U 0.1\*O207  
 P216: U 0.1\*P207  
 A219: U 'TOT FED INVESTMENT TAX CREDIT  
 B219: (C2) U @SUM(B217..B214)  
 C219: (C2) U @SUM(C217..C214)  
 D219: (C2) U @SUM(D217..D214)  
 E219: (C2) U @SUM(E217..E214)  
 F219: (C2) U @SUM(F217..F214)  
 G219: (C2) U @SUM(G217..G214)  
 H219: (C2) U @SUM(H217..H214)  
 I219: (C2) U @SUM(I217..I214)  
 J219: (C2) U @SUM(J217..J214)  
 K219: (C2) U @SUM(K217..K214)  
 L219: (C2) U @SUM(L217..L214)  
 M219: (C2) U @SUM(M217..M214)  
 N219: (C2) U @SUM(N217..N214)  
 O219: (C2) U @SUM(O217..O214)  
 P219: (C2) U @SUM(P217..P214)  
 A221: U 'DEPRECIATION 1ST YR BASIS  
 A223: U '3 Yr Property  
 B223: U (+B205-(B214/2))  
 C223: U (+C205-(C214/2))  
 D223: U (+D205-(D214/2))  
 E223: U (+E205-(E214/2))  
 F223: U (+F205-(F214/2))  
 G223: U (+G205-(G214/2))  
 H223: U (+H205-(H214/2))  
 I223: U (+I205-(I214/2))  
 J223: U (+J205-(J214/2))  
 K223: U (+K205-(K214/2))  
 L223: U (+L205-(L214/2))  
 M223: U (+M205-(M214/2))  
 N223: U (+N205-(N214/2))  
 O223: U (+O205-(O214/2))  
 P223: U (+P205-(P214/2))  
 A224: U '5 Yr Property  
 B224: U (+B206-(B215/2))  
 C224: U (+C206-(C215/2))  
 D224: U (+D206-(D215/2))  
 E224: U (+E206-(E215/2))  
 F224: U (+F206-(F215/2))  
 G224: U (+G206-(G215/2))  
 H224: U (+H206-(H215/2))  
 I224: U (+I206-(I215/2))  
 J224: U (+J206-(J215/2))  
 K224: U (+K206-(K215/2))



L224: U (+L206-(L215/2))  
 M224: U (+M206-(M215/2))  
 N224: U (+N206-(N215/2))  
 O224: U (+O206-(O215/2))  
 P224: U (+P206-(P215/2))  
 A225: U '10 Yr Property  
 B225: U (+B207-(B216/2))  
 C225: U (+C207-(C216/2))  
 D225: U (+D207-(D216/2))  
 E225: U (+E207-(E216/2))  
 F225: U (+F207-(F216/2))  
 G225: U (+G207-(G216/2))  
 H225: U (+H207-(H216/2))  
 I225: U (+I207-(I216/2))  
 J225: U (+J207-(J216/2))  
 K225: U (+K207-(K216/2))  
 L225: U (+L207-(L216/2))  
 M225: U (+M207-(M216/2))  
 N225: U (+N207-(N216/2))  
 O225: U (+O207-(O216/2))  
 P225: U (+P207-(P216/2))  
 A226: U '15 Yr Property  
 B226: U (+B208)  
 C226: U (+C208)  
 D226: U (+D208)  
 E226: U (+E208)  
 F226: U (+F208)  
 G226: U (+G208)  
 H226: U (+H208)  
 I226: U (+I208)  
 J226: U (+J208)  
 K226: U (+K208)  
 L226: U (+L208)  
 M226: U (+M208)  
 N226: U (+N208)  
 O226: U (+O208)  
 P226: U (+P208)  
 A228: U 'COMPUTE ANNUAL DEPRECIATION:  
 A230: U '3 Yr Property  
 B230: U  $0.25*B223$   
 C230: U  $0.25*C223+(B223*0.38)$   
 D230: U  $0.25*D223+(C223*0.38)+(0.37*B223)$   
 E230: U  $0.25*E223+(D223*0.38)+(0.37*C223)$   
 F230: U  $0.25*F223+(E223*0.38)+(0.37*D223)$   
 G230: U  $0.25*G223+(F223*0.38)+(0.37*E223)$   
 H230: U  $0.25*H223+(G223*0.38)+(0.37*F223)$   
 I230: U  $0.25*I223+(H223*0.38)+(0.37*G223)$

C232: U  $0.08 * C225 + (0.14 * B225)$   
 D232: U  $0.08 * D225 + (0.14 * C225) + (0.12 * B225)$   
 E232: U  $0.08 * E225 + (0.14 * D225) + (0.12 * C225) + (0.1 * B225)$   
 F232: U  $0.08 * F225 + (0.14 * E225) + (0.12 * D225) + (0.1 * C225) + (0.1 * B225)$   
 G232: U  $0.08 * G225 + (0.14 * F225) + (0.12 * E225) + (0.1 * D225) + (0.1 * C225) + (0.1 * B225)$   
 H232: U  $0.08 * H225 + (0.14 * G225) + (0.12 * F225) + (0.1 * E225) + (0.1 * D225) + (0.1 * C225) + (0.09 * B225)$   
 I232: U  $0.08 * I225 + (0.14 * H225) + (0.12 * G225) + ((D225 + E225 + F225) * 0.1) + (0.09 * (B225 + C225))$   
 J232: U  $0.08 * J225 + (0.14 * I225) + (0.12 * H225) + (0.1 * (E225 + F225 + G225)) + (0.09 * (B225 + C225 + D225 + E225))$   
 K232: U  $0.08 * K225 + (0.14 * J225) + (0.12 * I225) + (0.1 * (F225 + G225 + H225)) + (0.09 * (B225 + C225 + D225 + E225))$   
 L232: U  $0.08 * L225 + (0.14 * K225) + (0.12 * J225) + (0.1 * (G225 + H225 + I225)) + (0.09 * (C225 + D225 + E225 + F225))$   
 M232: U  $0.08 * M225 + (0.14 * L225) + (0.12 * K225) + (0.1 * (H225 + I225 + J225)) + (0.09 * (D225 + E225 + F225 + G225))$   
 N232: U  $0.08 * N225 + (0.14 * M225) + (0.12 * L225) + (0.1 * (I225 + J225 + K225)) + (0.09 * (E225 + F225 + G225 + H225))$   
 O232: U  $0.08 * O225 + (0.14 * N225) + (0.12 * M225) + (0.1 * (J225 + K225 + L225)) + (0.09 * (F225 + G225 + H225 + I225))$   
 P232: U  $0.08 * P225 + (0.14 * O225) + (0.12 * N225) + (0.1 * (K225 + L225 + M225)) + (0.09 * (G225 + H225 + I225 + J225))$   
 A233: U 15 Yr Property  
 B233: U  $0.12 * B226$   
 C233: U  $0.1 * B226 + (0.12 * C226)$   
 D233: U  $0.09 * B226 + (0.1 * C226) + (0.12 * D226)$   
 E233: U  $0.08 * B226 + (0.09 * C226) + (0.1 * D226)$   
 F233: U  $0.07 * B226 + (0.08 * C226) + (0.09 * D226)$   
 G233: U  $0.06 * B226 + (0.07 * C226) + (0.08 * D226)$   
 H233: U  $0.06 * B226 + (0.06 * C226) + (0.07 * D226)$

J230: U  $0.25 * J223 + (I223 * 0.38) + (0.37 * H223)$   
 K230: U  $0.25 * K223 + (J223 * 0.38) + (0.37 * I223)$   
 L230: U  $0.25 * L223 + (K223 * 0.38) + (0.37 * J223)$   
 M230: U  $0.25 * M223 + (L223 * 0.38) + (0.37 * K223)$   
 N230: U  $0.25 * N223 + (M223 * 0.38) + (0.37 * L223)$   
 O230: U  $0.25 * O223 + (N223 * 0.38) + (0.37 * M223)$   
 P230: U  $0.25 * P223 + (O223 * 0.38) + (0.37 * N223)$   
 A231: U '5 Yr Property  
 B231: U  $0.15 * B224$   
 C231: U  $0.15 * C224 + (B224 * 0.22)$   
 D231: U  $0.15 * D224 + (C224 * 0.22) + (0.21 * B224)$   
 E231: U  $0.15 * E224 + (D224 * 0.22) + (0.21 * C224) + (0.21 * B224)$   
 F231: U  $0.15 * F224 + (E224 * 0.22) + (0.21 * D224) + (0.21 * C224) + (0.21 * B224)$   
 G231: U  $0.15 * G224 + (F224 * 0.22) + (0.21 * E224) + (0.21 * D224) + (0.21 * C224)$   
 H231: U  $0.15 * H224 + (G224 * 0.22) + (0.21 * F224) + (0.21 * E224) + (0.21 * D224)$   
 I231: U  $0.15 * I224 + (H224 * 0.22) + (0.21 * G224) + (0.21 * F224) + (0.21 * E224)$   
 J231: U  $0.15 * J224 + (I224 * 0.22) + (0.21 * H224) + (0.21 * G224) + (0.21 * F224)$   
 K231: U  $0.15 * K224 + (J224 * 0.22) + (0.21 * I224) + (0.21 * H224) + (0.21 * G224)$   
 L231: U  $0.15 * L224 + (K224 * 0.22) + (0.21 * J224) + (0.21 * I224) + (0.21 * H224)$   
 M231: U  $0.15 * M224 + (L224 * 0.22) + (0.21 * K224) + (0.21 * J224) + (0.21 * I224)$   
 N231: U  $0.15 * N224 + (M224 * 0.22) + (0.21 * L224) + (0.21 * K224) + (0.21 * J224)$   
 O231: U  $0.15 * O224 + (N224 * 0.22) + (0.21 * M224) + (0.21 * L224) + (0.21 * K224)$   
 P231: U  $0.15 * P224 + (O224 * 0.22) + (0.21 * N224) + (0.21 * M224) + (0.21 * L224)$   
 A232: U '10 Yr Property  
 B232: U  $0.08 * B225$

I233: U  $0.06 * (B226 + C226 + D226)$   
 J233: U  $0.06 * (B226 + C226 + D226)$   
 K233: U  $(0.05 * B226) + (0.06 * (C226 + D226))$   
 L233: U  $(0.05 * (B226 + C226)) + (0.06 * D226)$   
 M233: U  $0.05 * (B226 + C226 + D226)$   
 N233: U  $0.05 * (B226 + C226 + D226)$   
 O233: U  $0.05 * (B226 + C226 + D226)$   
 P233: U  $0.05 * (B226 + C226 + D226)$   
 A235: U 'ANNUAL DEPRECIATION  
 B235: (C2) U @SUM(B233..B230)  
 C235: (C2) U @SUM(C233..C230)  
 D235: (C2) U @SUM(D233..D230)  
 E235: (C2) U @SUM(E233..E230)  
 F235: (C2) U @SUM(F233..F230)  
 G235: (C2) U @SUM(G233..G230)  
 H235: (C2) U @SUM(H233..H230)  
 I235: (C2) U @SUM(I233..I230)  
 J235: (C2) U @SUM(J233..J230)  
 K235: (C2) U @SUM(K233..K230)  
 L235: (C2) U @SUM(L233..L230)  
 M235: (C2) U @SUM(M233..M230)  
 N235: (C2) U @SUM(N233..N230)  
 O235: (C2) U @SUM(O233..O230)  
 P235: (C2) U @SUM(P233..P230)  
 A237: U 'FED TAX SAVINGS FROM DEPREC.  
 B237: (C2) U  $0.46 * (B235 + (B155 * B235))$   
 C237: (C2) U  $0.46 * (C235 + (C155 * C235))$   
 D237: (C2) U  $0.46 * (D235 + (D155 * D235))$   
 E237: (C2) U  $0.46 * (E235 + (E155 * E235))$   
 F237: (C2) U  $0.46 * (F235 + (F155 * F235))$   
 G237: (C2) U  $0.46 * (G235 + (G155 * G235))$   
 H237: (C2) U  $0.46 * (H235 + (H155 * H235))$   
 I237: (C2) U  $0.46 * (I235 + (I155 * I235))$   
 J237: (C2) U  $0.46 * (J235 + (J155 * J235))$   
 K237: (C2) U  $0.46 * (K235 + (K155 * K235))$   
 L237: (C2) U  $0.46 * (L235 + (L155 * L235))$   
 M237: (C2) U  $0.46 * (M235 + (M155 * M235))$   
 N237: (C2) U  $0.46 * (N235 + (N155 * N235))$   
 O237: (C2) U  $0.46 * (O235 + (O155 * O235))$   
 P237: (C2) U  $0.46 * (P235 + (P155 * P235))$   
 A239: U 'FED TAX SAVINGS FROM NON-  
 B239: (C2) U  $0.46 * ((B41 - B210) + (B155 * (B41 - B210)))$   
 C239: (C2) U  $0.46 * ((C41 - C210) + (C155 * (C41 - C210)))$   
 D239: (C2) U  $0.46 * ((D41 - D210) + (D155 * (D41 - D210)))$   
 E239: (C2) U  $0.46 * ((E41 - E210) + (E155 * (E41 - E210)))$   
 F239: (C2) U  $0.46 * ((F41 - F210) + (F155 * (F41 - F210)))$   
 G239: (C2) U  $0.46 * ((G41 - G210) + (G155 * (G41 - G210)))$

H239: (C2) U  $0.46 * ((H41 - H210) + (H155 * (H41 - H210)))$   
 I239: (C2) U  $0.46 * ((I41 - I210) + (I155 * (I41 - I210)))$   
 J239: (C2) U  $0.46 * ((J41 - J210) + (J155 * (J41 - J210)))$   
 K239: (C2) U  $0.46 * ((K41 - K210) + (K155 * (K41 - K210)))$   
 L239: (C2) U  $0.46 * ((L41 - L210) + (L155 * (L41 - L210)))$   
 M239: (C2) U  $0.46 * ((M41 - M210) + (M155 * (M41 - M210)))$   
 N239: (C2) U  $0.46 * ((N41 - N210) + (N155 * (N41 - N210)))$   
 O239: (C2) U  $0.46 * ((O41 - O210) + (O155 * (O41 - O210)))$   
 P239: (C2) U  $0.46 * ((P41 - P210) + (P155 * (P41 - P210)))$   
 A240: U DEPRECIABLE BUSINESS COSTS  
 A241: U \-  
 B241: U \-  
 C241: U \-  
 D241: U \-  
 E241: U \-  
 F241: U \-  
 G241: U \-  
 H241: U \-  
 I241: U \-  
 J241: U \-  
 K241: U \-  
 L241: U \-  
 M241: U \-  
 N241: U \-  
 O241: U \-  
 P241: U \-  
 B242: U "OLD METHOD  
 C242: U "OLD METHOD  
 D242: U "OLD METHOD  
 E242: U "OLD METHOD  
 F242: U "OLD METHOD  
 G242: U "OLD METHOD  
 H242: U "OLD METHOD  
 I242: U "OLD METHOD  
 J242: U "OLD METHOD  
 K242: U "OLD METHOD  
 L242: U "OLD METHOD  
 M242: U "OLD METHOD  
 N242: U "OLD METHOD  
 O242: U "OLD METHOD  
 P242: U "OLD METHOD  
 B243: U "YEAR 1  
 C243: U "YEAR 2  
 D243: U "YEAR 3  
 E243: U "YEAR 4  
 F243: U "YEAR 5  
 G243: U "YEAR 6

H243: U "YEAR 7  
 I243: U "YEAR 8  
 J243: U "YEAR 9  
 K243: U "YEAR 10  
 L243: U "YEAR 11  
 M243: U "YEAR 12  
 N243: U "YEAR 13  
 O243: U "YEAR 14  
 P243: U "YEAR 15  
 A245: U "STATE & LOCAL INCOME TAXES  
 A247: U \-  
 B247: U \-  
 C247: U \-  
 D247: U \-  
 E247: U \-  
 F247: U \-  
 G247: U \-  
 H247: U \-  
 I247: U \-  
 J247: U \-  
 K247: U \-  
 L247: U \-  
 M247: U \-  
 N247: U \-  
 O247: U \-  
 P247: U \-  
 A249: U "INVESTMENT IN DEPRECIABLE  
 B249: U "NEW METHOD  
 C249: U "NEW METHOD  
 D249: U "NEW METHOD  
 E249: U "NEW METHOD  
 F249: U "NEW METHOD  
 G249: U "NEW METHOD  
 H249: U "NEW METHOD  
 I249: U "NEW METHOD  
 J249: U "NEW METHOD  
 K249: U "NEW METHOD  
 L249: U "NEW METHOD  
 M249: U "NEW METHOD  
 N249: U "NEW METHOD  
 O249: U "NEW METHOD  
 P249: U "NEW METHOD  
 A250: U "ASSETS  
 B250: U "YEAR 1  
 C250: U "YEAR 2  
 D250: U "YEAR 3  
 E250: U "YEAR 4



F250: U "YEAR 5  
 G250: U "YEAR 6  
 H250: U "YEAR 7  
 I250: U "YEAR 8  
 J250: U "YEAR 9  
 K250: U "YEAR 10  
 L250: U "YEAR 11  
 M250: U "YEAR 12  
 N250: U "YEAR 13  
 O250: U "YEAR 14  
 P250: U "YEAR 15  
 A252: U '3 Yr Property (Spec1. Tooling)  
 A253: U '5 Yr. Property (Most Equipt.)  
 A254: U '10 Yr Property  
 A255: U '15 Yr. Property (facilities)  
 A257: U 'TOT DEPRECIABLE INVESTMENT  
 B257: (C2) U @SUM(B252..B255)  
 C257: (C2) U @SUM(C252..C255)  
 D257: (C2) U @SUM(D252..D255)  
 E257: (C2) U @SUM(E252..E255)  
 F257: (C2) U @SUM(F252..F255)  
 G257: (C2) U @SUM(G252..G255)  
 H257: (C2) U @SUM(H252..H255)  
 I257: (C2) U @SUM(I252..I255)  
 J257: (C2) U @SUM(J252..J255)  
 K257: (C2) U @SUM(K252..K255)  
 L257: (C2) U @SUM(L252..L255)  
 M257: (C2) U @SUM(M252..M255)  
 N257: (C2) U @SUM(N252..N255)  
 O257: (C2) U @SUM(O252..O255)  
 P257: (C2) U @SUM(P252..P255)  
 A259: U 'COMPUTE FED INVEST TAX CREDITS:  
 A261: U '3 Yr Property  
 B261: U 0.06\*B252  
 C261: U 0.06\*C252  
 D261: U 0.06\*D252  
 E261: U 0.06\*E252  
 F261: U 0.06\*F252  
 G261: U 0.06\*G252  
 H261: U 0.06\*H252  
 I261: U 0.06\*I252  
 J261: U 0.06\*J252  
 K261: U 0.06\*K252  
 L261: U 0.06\*L252  
 M261: U 0.06\*M252  
 N261: U 0.06\*N252  
 O261: U 0.06\*O252

P261: U 0.06\*P252  
 A262: U \*5 Yr Property  
 B262: U 0.1\*B253  
 C262: U 0.1\*C253  
 D262: U 0.1\*D253  
 E262: U 0.1\*E253  
 F262: U 0.1\*F253  
 G262: U 0.1\*G253  
 H262: U 0.1\*H253  
 I262: U 0.1\*I253  
 J262: U 0.1\*J253  
 K262: U 0.1\*K253  
 L262: U 0.1\*L253  
 M262: U 0.1\*M253  
 N262: U 0.1\*N253  
 O262: U 0.1\*O253  
 P262: U 0.1\*P253  
 A263: U \*10 Yr Property  
 B263: U 0.1\*B254  
 C263: U 0.1\*C254  
 D263: U 0.1\*D254  
 E263: U 0.1\*E254  
 F263: U 0.1\*F254  
 G263: U 0.1\*G254  
 H263: U 0.1\*H254  
 I263: U 0.1\*I254  
 J263: U 0.1\*J254  
 K263: U 0.1\*K254  
 L263: U 0.1\*L254  
 M263: U 0.1\*M254  
 N263: U 0.1\*N254  
 O263: U 0.1\*O254  
 P263: U 0.1\*P254  
 A266: U \*TOT FED INVESTMENT TAX CREDIT  
 B266: (C2) U @SUM(B264..B261)  
 C266: (C2) U @SUM(C264..C261)  
 D266: (C2) U @SUM(D264..D261)  
 E266: (C2) U @SUM(E264..E261)  
 F266: (C2) U @SUM(F264..F261)  
 G266: (C2) U @SUM(G264..G261)  
 H266: (C2) U @SUM(H264..H261)  
 I266: (C2) U @SUM(I264..I261)  
 J266: (C2) U @SUM(J264..J261)  
 K266: (C2) U @SUM(K264..K261)  
 L266: (C2) U @SUM(L264..L261)  
 M266: (C2) U @SUM(M264..M261)  
 N266: (C2) U @SUM(N264..N261)



Q266: (C2) U @SUM(Q264..Q261)  
 P266: (C2) U @SUM(P264..P261)  
 A268: U 'DEPRECIATION 1ST YR BASIS  
 A270: U '3 Yr Property  
 B270: U (+B252-(B261/2))  
 C270: U (+C252-(C261/2))  
 D270: U (+D252-(D261/2))  
 E270: U (+E252-(E261/2))  
 F270: U (+F252-(F261/2))  
 G270: U (+G252-(G261/2))  
 H270: U (+H252-(H261/2))  
 I270: U (+I252-(I261/2))  
 J270: U (+J252-(J261/2))  
 K270: U (+K252-(K261/2))  
 L270: U (+L252-(L261/2))  
 M270: U (+M252-(M261/2))  
 N270: U (+N252-(N261/2))  
 O270: U (+O252-(O261/2))  
 P270: U (+P252-(P261/2))  
 A271: U '5 Yr Property  
 B271: U (+B253-(B262/2))  
 C271: U (+C253-(C262/2))  
 D271: U (+D253-(D262/2))  
 E271: U (+E253-(E262/2))  
 F271: U (+F253-(F262/2))  
 G271: U (+G253-(G262/2))  
 H271: U (+H253-(H262/2))  
 I271: U (+I253-(I262/2))  
 J271: U (+J253-(J262/2))  
 K271: U (+K253-(K262/2))  
 L271: U (+L253-(L262/2))  
 M271: U (+M253-(M262/2))  
 N271: U (+N253-(N262/2))  
 O271: U (+O253-(O262/2))  
 P271: U (+P253-(P262/2))  
 A272: U '10 Yr Property  
 B272: U (+B254-(B263/2))  
 C272: U (+C254-(C263/2))  
 D272: U (+D254-(D263/2))  
 E272: U (+E254-(E263/2))  
 F272: U (+F254-(F263/2))  
 G272: U (+G254-(G263/2))  
 H272: U (+H254-(H263/2))  
 I272: U (+I254-(I263/2))  
 J272: U (+J254-(J263/2))  
 K272: U (+K254-(K263/2))  
 L272: U (+L254-(L263/2))

M272: U (+M254-(M263/2))  
N272: U (+N254-(N263/2))  
O272: U (+O254-(O263/2))  
P272: U (+P254-(P263/2))  
A273: U '15 Yr Property  
B273: U (+B255)  
C273: U (+C255)  
D273: U (+D255)  
E273: U (+E255)  
F273: U (+F255)  
G273: U (+G255)  
H273: U (+H255)  
I273: U (+I255)  
J273: U (+J255)  
K273: U (+K255)  
L273: U (+L255)  
M273: U (+M255)  
N273: U (+N255)  
O273: U (+O255)  
P273: U (+P255)  
A275: U 'COMPUTE ANNUAL DEPRECIATION:  
A277: U '3 Yr Property  
B277: U 0.25\*B270  
C277: U 0.25\*C270+(B270\*0.38)  
D277: U 0.25\*D270+(C270\*0.38)+(0.37\*B270)  
E277: U 0.25\*E270+(D270\*0.38)+(0.37\*C270)  
F277: U 0.25\*F270+(E270\*0.38)+(0.37\*D270)  
G277: U 0.25\*G270+(F270\*0.38)+(0.37\*E270)  
H277: U 0.25\*H270+(G270\*0.38)+(0.37\*F270)  
I277: U 0.25\*I270+(H270\*0.38)+(0.37\*G270)  
J277: U 0.25\*J270+(I270\*0.38)+(0.37\*H270)  
K277: U 0.25\*K270+(J270\*0.38)+(0.37\*I270)  
L277: U 0.25\*L270+(K270\*0.38)+(0.37\*J270)  
M277: U 0.25\*M270+(L270\*0.38)+(0.37\*K270)  
N277: U 0.25\*N270+(M270\*0.38)+(0.37\*L270)  
O277: U 0.25\*O270+(N270\*0.38)+(0.37\*M270)  
P277: U 0.25\*P270+(O270\*0.38)+(0.37\*N270)  
A278: U '5 Yr Property  
B278: U 0.15\*B271  
C278: U 0.15\*C271+(B271\*0.22)  
D278: U 0.15\*D271+(C271\*0.22)+(0.21\*B271)  
E278: U 0.15\*E271+(D271\*0.22)+(0.21\*C271)+(0.21\*B271)  
F278: U 0.15\*F271+(E271\*0.22)+(0.21\*D271)+(0.21\*C271)+(0.21\*B271)  
G278: U 0.15\*G271+(F271\*0.22)+(0.21\*E271)+(0.21\*D271)+(0.21\*C271)  
H278: U 0.15\*H271+(G271\*0.22)+(0.21\*F271)+(0.21\*E271)+(0.21\*D271)  
I278: U 0.15\*I271+(H271\*0.22)+(0.21\*G271)+(0.21\*F271)+(0.21\*E271)  
J278: U 0.15\*J271+(I271\*0.22)+(0.21\*H271)+(0.21\*G271)+(0.21\*F271)

K278: U  $0.15 * K271 + (J271 * 0.22) + (0.21 * I271) + (0.21 * H271) + (0.21 * G271)$   
 L278: U  $0.15 * L271 + (K271 * 0.22) + (0.21 * J271) + (0.21 * I271) + (0.21 * H271)$   
 M278: U  $0.15 * M271 + (L271 * 0.22) + (0.21 * K271) + (0.21 * J271) + (0.21 * I271)$   
 N278: U  $0.15 * N271 + (M271 * 0.22) + (0.21 * L271) + (0.21 * K271) + (0.21 * J271)$   
 O278: U  $0.15 * O271 + (N271 * 0.22) + (0.21 * M271) + (0.21 * L271) + (0.21 * K271)$   
 P278: U  $0.15 * P271 + (O271 * 0.22) + (0.21 * N271) + (0.21 * M271) + (0.21 * L271)$   
 A279: U 10 Yr Property  
 B279: U  $0.08 * B272$   
 C279: U  $0.08 * C272 + (0.14 * B272)$   
 D279: U  $0.08 * D272 + (0.14 * C272) + (0.12 * B272)$   
 E279: U  $0.08 * E272 + (0.14 * D272) + (0.12 * C272) + (0.1 * B272)$   
 F279: U  $0.08 * F272 + (0.14 * E272) + (0.12 * D272) + (0.1 * C272) + (0.1 * B272)$   
 G279: U  $0.08 * G272 + (0.14 * F272) + (0.12 * E272) + (0.1 * D272) + (0.1 * C272) + (0.1 * B272)$   
 H279: U  $0.08 * H272 + (0.14 * G272) + (0.12 * F272) + (0.1 * E272) + (0.1 * D272) + (0.1 * C272) + (0.09 * B272)$   
 I279: U  $0.08 * I272 + (0.14 * H272) + (0.12 * G272) + ((D272 + E272 + F272) * 0.1) + (0.09 * (B272 + C272))$   
 J279: U  $0.08 * J272 + (0.14 * I272) + (0.12 * H272) + (0.1 * (E272 + F272 + G272)) + (0.09 * (B272 + C272 + D272))$   
 K279: U  $0.08 * K272 + (0.14 * J272) + (0.12 * I272) + (0.1 * (F272 + G272 + H272)) + (0.09 * (B272 + C272 + D272 + E272))$   
 L279: U  $0.08 * L272 + (0.14 * K272) + (0.12 * J272) + (0.1 * (G272 + H272 + I272)) + (0.09 * (C272 + D272 + E272 + F272))$   
 M279: U  $0.08 * M272 + (0.14 * L272) + (0.12 * K272) + (0.1 * (H272 + I272 + J272)) + (0.09 * (D272 + E272 + F272 + G272))$   
 N279: U  $0.08 * N272 + (0.14 * M272) + (0.12 * L272) + (0.1 * (I272 + J272 + K272)) + (0.09 * (E272 + F272 + G272 + H272))$   
 O279: U  $0.08 * O272 + (0.14 * N272) + (0.12 * M272) + (0.1 * (J272 + K272 + L272)) + (0.09 * (F272 + G272 + H272 + I272))$   
 P279: U  $0.08 * P272 + (0.14 * O272) + (0.12 * N272) + (0.1 * (K272 + L272 + M272)) + (0.09 * (G272 + H272 + I272 + J272))$

A280: U 15 Yr Property  
 B280: U  $0.12*B273$   
 C280: U  $0.1*B273+(0.12*C273)$   
 D280: U  $0.09*B273+(0.1*C273)+(0.12*D273)$   
 E280: U  $0.08*B273+(0.09*C273)+(0.1*D273)$   
 F280: U  $0.07*B273+(0.08*C273)+(0.09*D273)$   
 G280: U  $0.06*B273+(0.07*C273)+(0.08*D273)$   
 H280: U  $0.06*B273+(0.06*C273)+(0.07*D273)$   
 I280: U  $0.06*(B273+C273+D273)$   
 J280: U  $0.06*(B273+C273+D273)$   
 K280: U  $(0.05*B273)+(0.06*(C273+D273))$   
 L280: U  $(0.05*(B273+C273))+(0.06*D273)$   
 M280: U  $0.05*(B273+C273+D273)$   
 N280: U  $0.05*(B273+C273+D273)$   
 O280: U  $0.05*(B273+C273+D273)$   
 P280: U  $0.05*(B273+C273+D273)$   
 A282: U ANNUAL DEPRECIATION  
 B282: (C2) U @SUM(B280..B277)  
 C282: (C2) U @SUM(C280..C277)  
 D282: (C2) U @SUM(D280..D277)  
 E282: (C2) U @SUM(E280..E277)  
 F282: (C2) U @SUM(F280..F277)  
 G282: (C2) U @SUM(G280..G277)  
 H282: (C2) U @SUM(H280..H277)  
 I282: (C2) U @SUM(I280..I277)

J282: (C2) U @SUM(J280..J277)  
 K282: (C2) U @SUM(K280..K277)  
 L282: (C2) U @SUM(L280..L277)  
 M282: (C2) U @SUM(M280..M277)  
 N282: (C2) U @SUM(N280..N277)  
 O282: (C2) U @SUM(O280..O277)  
 P282: (C2) U @SUM(P280..P277)  
 A284: U \*FED TAX SAVINGS FROM DEPREC.  
 B284: (C2) U 0.46\*B282  
 C284: (C2) U 0.46\*C282  
 D284: (C2) U 0.46\*D282  
 E284: (C2) U 0.46\*E282  
 F284: (C2) U 0.46\*F282  
 G284: (C2) U 0.46\*G282  
 H284: (C2) U 0.46\*H282  
 I284: (C2) U 0.46\*I282  
 J284: (C2) U 0.46\*J282  
 K284: (C2) U 0.46\*K282  
 L284: (C2) U 0.46\*L282  
 M284: (C2) U 0.46\*M282  
 N284: (C2) U 0.46\*N282  
 O284: (C2) U 0.46\*O282  
 P284: (C2) U 0.46\*P282  
 A286: U \*FED TAX SAVINGS FROM NON-  
 B286: (C2) U 0.46\*(B78-B257)  
 C286: (C2) U 0.46\*(C78-C257)  
 D286: (C2) U 0.46\*(D78-D257)  
 E286: (C2) U 0.46\*(E78-E257)  
 F286: (C2) U 0.46\*(F78-F257)  
 G286: (C2) U 0.46\*(G78-G257)  
 H286: (C2) U 0.46\*(H78-H257)  
 I286: (C2) U 0.46\*(I78-I257)  
 J286: (C2) U 0.46\*(J78-J257)  
 K286: (C2) U 0.46\*(K78-K257)  
 L286: (C2) U 0.46\*(L78-L257)  
 M286: (C2) U 0.46\*(M78-M257)  
 N286: (C2) U 0.46\*(N78-N257)  
 O286: (C2) U 0.46\*(O78-O257)  
 P286: (C2) U 0.46\*(P78-P257)  
 A287: U \*DEPRECIABLE BUSINESS COSTS  
 A289: U \-  
 B289: U \-  
 C289: U \-  
 D289: U \-  
 E289: U \-  
 F289: U \-  
 G289: U \-

H289: U \-  
 I289: U \-  
 J289: U \-  
 K289: U \-  
 L289: U \-  
 M289: U \-  
 N289: U \-  
 O289: U \-  
 P289: U \-  
 B290: U "NEW METHOD  
 C290: U "NEW METHOD  
 D290: U "NEW METHOD  
 E290: U "NEW METHOD  
 F290: U "NEW METHOD  
 G290: U "NEW METHOD  
 H290: U "NEW METHOD  
 I290: U "NEW METHOD  
 J290: U "NEW METHOD  
 K290: U "NEW METHOD  
 L290: U "NEW METHOD  
 M290: U "NEW METHOD  
 N290: U "NEW METHOD  
 O290: U "NEW METHOD  
 P290: U "NEW METHOD  
 B291: U "YEAR 1  
 C291: U "YEAR 2  
 D291: U "YEAR 3  
 E291: U "YEAR 4  
 F291: U "YEAR 5  
 G291: U "YEAR 6  
 H291: U "YEAR 7  
 I291: U "YEAR 8  
 J291: U "YEAR 9  
 K291: U "YEAR 10  
 L291: U "YEAR 11  
 M291: U "YEAR 12  
 N291: U "YEAR 13  
 O291: U "YEAR 14  
 P291: U "YEAR 15  
 A293: U "STATE & LOCAL INCOME TAXES  
 A295: U \-  
 B295: U \-  
 C295: U \-  
 D295: U \-  
 E295: U \-  
 F295: U \-  
 G295: U \-

H295: U \-  
 I295: U \-  
 J295: U \-  
 K295: U \-  
 L295: U \-  
 M295: U \-  
 N295: U \-  
 O295: U \-  
 P295: U \-  
 A296: U 'SUMMARY OF AFTER TAX ANALYSIS:  
 B298: U "YEAR 1  
 C298: U "YEAR 2  
 D298: U "YEAR 3  
 E298: U "YEAR 4  
 F298: U "YEAR 5  
 G298: U "YEAR 6  
 H298: U "YEAR 7  
 I298: U "YEAR 8  
 J298: U "YEAR 9  
 K298: U "YEAR 10  
 L298: U "YEAR 11  
 M298: U "YEAR 12  
 N298: U "YEAR 13  
 O298: U "YEAR 14  
 P298: U "YEAR 15  
 A300: U 'UNDISC. CASH FLOW (BEF TAX)  
 B300: (C2) U +B176  
 C300: (C2) U +C176  
 D300: (C2) U +D176  
 E300: (C2) U +E176  
 F300: (C2) U +F176  
 G300: (C2) U +G176  
 H300: (C2) U +H176  
 I300: (C2) U +I176  
 J300: (C2) U +J176  
 K300: (C2) U +K176  
 L300: (C2) U +L176  
 M300: (C2) U +M176  
 N300: (C2) U +N176  
 O300: (C2) U +O176  
 P300: (C2) U +P176  
 A302: U 'ADJUSTMENTS TO CASH FLOW  
 A303: U 'FROM TAX IMPACTS:  
 A305: U 'NON-DEPRECIABLE BUSINESS COSTS  
 B305: (C2) U +B286-B239  
 C305: (C2) U +C286-C239  
 D305: (C2) U +D286-D239



E305: (C2) U +E286-E239  
 F305: (C2) U +F286-F239  
 G305: (C2) U +G286-G239  
 H305: (C2) U +H286-H239  
 I305: (C2) U +I286-I239  
 J305: (C2) U +J286-J239  
 K305: (C2) U +K286-K239  
 L305: (C2) U +L286-L239  
 M305: (C2) U +M286-M239  
 N305: (C2) U +N286-N239  
 O305: (C2) U +O286-O239  
 P305: (C2) U +P286-P239  
 A307: U INVESTMENT TAX CREDIT  
 B307: (C2) U (B266-B219)  
 C307: (C2) U (C266-C219)  
 D307: (C2) U (D266-D219)  
 E307: (C2) U (E266-E219)  
 F307: (C2) U (F266-F219)  
 G307: (C2) U (G266-G219)  
 H307: (C2) U (H266-H219)  
 I307: (C2) U (I266-I219)  
 J307: (C2) U (J266-J219)  
 K307: (C2) U (K266-K219)  
 L307: (C2) U (L266-L219)  
 M307: (C2) U (M266-M219)  
 N307: (C2) U (N266-N219)  
 O307: (C2) U (O266-O219)  
 P307: (C2) U (P266-P219)  
 A309: U DEPRECIATION DEDUCTIONS  
 B309: (C2) U (+B284-B237)  
 C309: (C2) U (+C284-C237)  
 D309: (C2) U (+D284-D237)  
 E309: (C2) U (+E284-E237)  
 F309: (C2) U (+F284-F237)  
 G309: (C2) U (+G284-G237)  
 H309: (C2) U (+H284-H237)  
 I309: (C2) U (+I284-I237)  
 J309: (C2) U (+J284-J237)  
 K309: (C2) U (+K284-K237)  
 L309: (C2) U (+L284-L237)  
 M309: (C2) U (+M284-M237)  
 N309: (C2) U (+N284-N237)  
 O309: (C2) U (+O284-O237)  
 P309: (C2) U (+P284-P237)  
 A311: U STATE & LOCAL TAXES  
 B311: (C2) U +B245-B293  
 C311: (C2) U +C245-C293



D311: (C2) U +D245-D293  
 E311: (C2) U +E245-E293  
 F311: (C2) U +F245-F293  
 G311: (C2) U +G245-G293  
 H311: (C2) U +H245-H293  
 I311: (C2) U +I245-I293  
 J311: (C2) U +J245-J293  
 K311: (C2) U +K245-K293  
 L311: (C2) U +L245-L293  
 M311: (C2) U +M245-M293  
 N311: (C2) U +N245-N293  
 O311: (C2) U +O245-O293  
 P311: (C2) U +P245-P293  
 A313: U \*AFTER TAX CASH FLOW (UNDISC)  
 B313: (C2) U +B300+B305+B307+B309+B311  
 C313: (C2) U +C300+C305+C307+C309+C311  
 D313: (C2) U +D300+D305+D307+D309+D311  
 E313: (C2) U +E300+E305+E307+E309+E311  
 F313: (C2) U +F300+F305+F307+F309+F311  
 G313: (C2) U +G300+G305+G307+G309+G311  
 H313: (C2) U +H300+H305+H307+H309+H311  
 I313: (C2) U +I300+I305+I307+I309+I311  
 J313: (C2) U +J300+J305+J307+J309+J311  
 K313: (C2) U +K300+K305+K307+K309+K311  
 L313: (C2) U +L300+L305+L307+L309+L311  
 M313: (C2) U +M300+M305+M307+M309+M311  
 N313: (C2) U +N300+N305+N307+N309+N311  
 O313: (C2) U +O300+O305+O307+O309+O311  
 P313: (C2) U +P300+P305+P307+P309+P311  
 A315: U \*AFTER TAX CASH FLOW  
 B315: (C2) U +B313  
 C315: (C2) U +B315+C313  
 D315: (C2) U +C315+D313  
 E315: (C2) U +D315+E313  
 F315: (C2) U +E315+F313  
 G315: (C2) U +F315+G313  
 H315: (C2) U +G315+H313  
 I315: (C2) U +H315+I313  
 J315: (C2) U +I315+J313  
 K315: (C2) U +J315+K313  
 L315: (C2) U +K315+L313  
 M315: (C2) U +L315+M313  
 N315: (C2) U +M315+N313  
 O315: (C2) U +N315+O313  
 P315: (C2) U +O315+P313  
 A316: U \*CUMULATIVE (UNDISC)  
 A318: U \*INTERNAL RATE OF RETURN

B318: (F3) U @IRR(0.5,B313..P313)  
 A319: U '(AFTER TAX, UNDISC)  
 B319: U '  
 A322: U 'DISCOUNTED CASH FLOW ANALYSIS:  
 A324: U 'DISCOUNT RATE:  
 B324: (F2) U 0.2  
 B326: U "YEAR 1  
 C326: U "YEAR 2  
 D326: U "YEAR 3  
 E326: U "YEAR 4  
 F326: U "YEAR 5  
 G326: U "YEAR 6  
 H326: U "YEAR 7  
 I326: U "YEAR 8  
 J326: U "YEAR 9  
 K326: U "YEAR 10  
 L326: U "YEAR 11  
 M326: U "YEAR 12  
 N326: U "YEAR 13  
 O326: U "YEAR 14  
 P326: U "YEAR 15  
 A328: U 'AFTER TAX DISCOUNTED CASH  
 B328: (C2) U @EXP(-B324\*1)\*B313  
 C328: (C2) U @EXP(-B324\*2)\*C313  
 D328: (C2) U @EXP(-B324\*3)\*D313  
 E328: (C2) U @EXP(-B324\*4)\*E313  
 F328: (C2) U @EXP(-B324\*5)\*F313  
 G328: (C2) U @EXP(-B324\*6)\*G313  
 H328: (C2) U @EXP(-B324\*7)\*H313  
 I328: (C2) U @EXP(-B324\*8)\*I313  
 J328: (C2) U @EXP(-B324\*9)\*J313  
 K328: (C2) U @EXP(-B324\*10)\*K313  
 L328: (C2) U @EXP(-B324\*11)\*L313  
 M328: (C2) U @EXP(-B324\*12)\*M313  
 N328: (C2) U @EXP(-B324\*13)\*N313  
 O328: (C2) U @EXP(-B324\*14)\*O313  
 P328: (C2) U @EXP(-B324\*15)\*P313  
 A329: U 'FLOW (CONTINUOUS DISCOUNTING)  
 A331: U 'CUMULATIVE DISCOUNTED CASH  
 B331: (C2) U +B328  
 C331: (C2) U +B331+C328  
 D331: (C2) U +C331+D328  
 E331: (C2) U +D331+E328  
 F331: (C2) U +E331+F328  
 G331: (C2) U +F331+G328  
 H331: (C2) U +G331+H328  
 I331: (C2) U +H331+I328



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A348: U ^/xiCOLUMNS=1~/wdcP1..P1~/xgFORMCONVERT~
A349: U ^/xiCOLUMNS=2~/wdcO1..P1~/xgFORMCONVERT~
A350: U ^/xiCOLUMNS=3~/wdcN1..P1~/xgFORMCONVERT~
A351: U ^/xiCOLUMNS=4~/wdcM1..P1~/xgFORMCONVERT~
A352: U ^/xiCOLUMNS=5~/wdcL1..P1~/xgFORMCONVERT~
A353: U ^/xiCOLUMNS=6~/wdcK1..P1~/xgFORMCONVERT~
A354: U ^/xiCOLUMNS=7~/wdcJ1..P1~/xgFORMCONVERT~
A355: U ^/xiCOLUMNS=8~/wdcI1..P1~/xgFORMCONVERT~
A356: U ^/xiCOLUMNS=9~/wdcH1..P1~/xgFORMCONVERT~
A357: U ^/xiCOLUMNS=10~/wdcG1..P1~/xgFORMCONVERT~
A358: U ^/xiCOLUMNS=11~/wdcF1..P1~/xgFORMCONVERT~
A359: U ^/xiCOLUMNS=12~/wdcE1..P1~/xgFORMCONVERT~
A360: U ^/xiCOLUMNS=13~/wdcD1..P1~/xgFORMCONVERT~
A361: U ^/xiCOLUMNS=14~/wdcC1..P1~/xgFORMCONVERT~
A362: U ^/xiCOLUMNS=0~/xgCLOSEOUT~
A363: U ^/rncERROR~A385~{goto}ERROR~/xgERROR~
A365: U ^Enter the number of years to compute:
C365: ^
D365: ^
A366: U ^
A367: U ^ and press the "Enter" key.
A385: U ^ERROR: Limit number of years to 15 or less.
A386: U ^Press escape and type "Alt-A" again.
A405: ^/xiCOLUMNS=1~{goto}B119~@IRR(0.4,B115..0115)~
A406: ^/xiCOLUMNS=1~{goto}B123~@NPV(B121,B115..0115)~
A407: U ^/xiCOLUMNS=1~{goto}B181~@IRR(0.4,B176..0176)~
A408: U ^/xiCOLUMNS=1~{goto}B185~@NPV(B183,B176..0176)~
A409: U ^/xiCOLUMNS=1~{goto}B318~@IRR(0.5,B313..0313)~
A410: U ^/xiCOLUMNS=1~{goto}B334~@IRR(0.4,B328..0328)~/xgCLOSEOUT~
A411: ^/xiCOLUMNS=2~{goto}B119~@IRR(0.4,B115..N115)~

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A412: ?/xiCOLUMNS=2~~(goto)B123~@NPV(B121,B115..N115)~  
A413: U ?/xiCOLUMNS=2~~(goto)B181~@IRR(0.4,B176..M176)~  
A414: U ?/xiCOLUMNS=2~~(goto)B185~@NPV(B183,B176..M176)~  
A415: U ?/xiCOLUMNS=2~~(goto)B318~@IRR(0.5,B313..M313)~  
A416: U ?/xiCOLUMNS=2~~(goto)B334~@IRR(0.4,B328..N328)~/xgCLOSEOUT~  
A417: ?/xiCOLUMNS=3~~(goto)B119~@IRR(0.4,B115..M115)~  
A418: ?/xiCOLUMNS=3~~(goto)B123~@NPV(B121,B115..M115)~  
A419: U ?/xiCOLUMNS=3~~(goto)B181~@IRR(0.4,B176..M176)~  
A420: U ?/xiCOLUMNS=3~~(goto)B185~@NPV(B183,B176..M176)~  
A421: U ?/xiCOLUMNS=3~~(goto)B318~@IRR(0.5,B313..M313)~  
A422: U ?/xiCOLUMNS=3~~(goto)B334~@IRR(0.4,B328..M328)~/xgCLOSEOUT~  
A423: ?/xiCOLUMNS=4~~(goto)B119~@IRR(0.4,B115..L115)~  
A424: ?/xiCOLUMNS=4~~(goto)B123~@NPV(B121,B115..L115)~  
A425: U ?/xiCOLUMNS=4~~(goto)B181~@IRR(0.4,B176..L176)~  
A426: U ?/xiCOLUMNS=4~~(goto)B185~@NPV(B183,B176..L176)~  
A427: U ?/xiCOLUMNS=4~~(goto)B318~@IRR(0.5,B313..L313)~  
A428: U ?/xiCOLUMNS=4~~(goto)B334~@IRR(0.4,B328..L328)~/xgCLOSEOUT~  
A429: ?/xiCOLUMNS=5~~(goto)B119~@IRR(0.4,B115..K115)~  
A430: ?/xiCOLUMNS=5~~(goto)B123~@NPV(B121,B115..K115)~  
A431: U ?/xiCOLUMNS=5~~(goto)B181~@IRR(0.4,B176..K176)~  
A432: U ?/xiCOLUMNS=5~~(goto)B185~@NPV(B183,B176..K176)~  
A433: U ?/xiCOLUMNS=5~~(goto)B318~@IRR(0.5,B313..K313)~  
A434: U ?/xiCOLUMNS=5~~(goto)B334~@IRR(0.4,B328..K328)~/xgCLOSEOUT~  
A435: ?/xiCOLUMNS=6~~(goto)B119~@IRR(0.4,B115..J115)~  
A436: ?/xiCOLUMNS=6~~(goto)B123~@NPV(B121,B115..J115)~  
A437: U ?/xiCOLUMNS=6~~(goto)B181~@IRR(0.4,B176..J176)~  
A438: U ?/xiCOLUMNS=6~~(goto)B185~@NPV(B183,B176..J176)~  
A439: U ?/xiCOLUMNS=6~~(goto)B318~@IRR(0.5,B313..J313)~  
A440: U ?/xiCOLUMNS=6~~(goto)B334~@IRR(0.4,B328..J328)~/xgCLOSEOUT~  
A441: ?/xiCOLUMNS=7~~(goto)B119~@IRR(0.4,B115..I115)~  
A442: ?/xiCOLUMNS=7~~(goto)B123~@NPV(B121,B115..I115)~  
A443: U ?/xiCOLUMNS=7~~(goto)B181~@IRR(0.4,B176..I176)~  
A444: U ?/xiCOLUMNS=7~~(goto)B185~@NPV(B183,B176..I176)~  
A445: U ?/xiCOLUMNS=7~~(goto)B318~@IRR(0.5,B313..I313)~  
A446: U ?/xiCOLUMNS=7~~(goto)B334~@IRR(0.4,B328..I328)~/xgCLOSEOUT~  
A447: ?/xiCOLUMNS=8~~(goto)B119~@IRR(0.4,B115..H115)~  
A448: ?/xiCOLUMNS=8~~(goto)B123~@NPV(B121,B115..H115)~  
A449: U ?/xiCOLUMNS=8~~(goto)B181~@IRR(0.4,B176..H176)~  
A450: U ?/xiCOLUMNS=8~~(goto)B185~@NPV(B183,B176..H176)~  
A451: U ?/xiCOLUMNS=8~~(goto)B318~@IRR(0.5,B313..H313)~  
A452: U ?/xiCOLUMNS=8~~(goto)B334~@IRR(0.4,B328..H328)~/xgCLOSEOUT~  
A453: ?/xiCOLUMNS=9~~(goto)B119~@IRR(0.4,B115..G115)~  
A454: ?/xiCOLUMNS=9~~(goto)B123~@NPV(B121,B115..G115)~  
A455: U ?/xiCOLUMNS=9~~(goto)B181~@IRR(0.4,B176..G176)~  
A456: U ?/xiCOLUMNS=9~~(goto)B185~@NPV(B183,B176..G176)~  
A457: U ?/xiCOLUMNS=9~~(goto)B318~@IRR(0.5,B313..G313)~  
A458: U ?/xiCOLUMNS=9~~(goto)B334~@IRR(0.4,B328..G328)~/xgCLOSEOUT~



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A459: ?/xiCOLUMNS=10~~(goto)B119~@IRR(0.4,B115..F115)~
A460: ?/xiCOLUMNS=10~~(goto)B123~@NPV(B121,B115..F115)~
A461: U ?/xiCOLUMNS=10~~(goto)B181~@IRR(0.4,B176..F176)~
A462: U ?/xiCOLUMNS=10~~(goto)B185~@NPV(B183,B176..F176)~
A463: U ?/xiCOLUMNS=10~~(goto)B31B~@IRR(0.5,B313..F313)~
A464: U ?/xiCOLUMNS=10~~(goto)B334~@IRR(0.4,B328..F328)~/xgCLOSEOUT~
A465: ?/xiCOLUMNS=11~~(goto)B119~@IRR(0.4,B115..E115)~
A466: ?/xiCOLUMNS=11~~(goto)B123~@NPV(B121,B115..E115)~
A467: U ?/xiCOLUMNS=11~~(goto)B181~@IRR(0.4,B176..E176)~
A468: U ?/xiCOLUMNS=11~~(goto)B185~@NPV(B183,B176..E176)~
A469: U ?/xiCOLUMNS=11~~(goto)B31B~@IRR(0.5,B313..E313)~
A470: U ?/xiCOLUMNS=11~~(goto)B334~@IRR(0.4,B328..E328)~/xgCLOSEOUT~
A471: ?/xiCOLUMNS=12~~(goto)B119~@IRR(0.4,B115..D115)~
A472: ?/xiCOLUMNS=12~~(goto)B123~@NPV(B121,B115..D115)~
A473: U ?/xiCOLUMNS=12~~(goto)B181~@IRR(0.4,B176..D176)~
A474: U ?/xiCOLUMNS=12~~(goto)B185~@NPV(B183,B176..D176)~
A475: U ?/xiCOLUMNS=12~~(goto)B31B~@IRR(0.5,B313..D313)~
A476: U ?/xiCOLUMNS=12~~(goto)B334~@IRR(0.4,B328..D328)~/xgCLOSEOUT~
A477: ?/xiCOLUMNS=13~~(goto)B119~@IRR(0.4,B115..C115)~
A478: ?/xiCOLUMNS=13~~(goto)B123~@NPV(B121,B115..C115)~
A479: U ?/xiCOLUMNS=13~~(goto)B181~@IRR(0.4,B176..C176)~
A480: U ?/xiCOLUMNS=13~~(goto)B185~@NPV(B183,B176..C176)~
A481: U ?/xiCOLUMNS=13~~(goto)B31B~@IRR(0.5,B313..C313)~
A482: U ?/xiCOLUMNS=13~~(goto)B334~@IRR(0.4,B328..C328)~/xgCLOSEOUT~
A483: ?/xiCOLUMNS=14~~(goto)B119~@IRR(0.4,B115..B115)~
A484: ?/xiCOLUMNS=14~~(goto)B123~@NPV(B121,B115..B115)~
A485: U ?/xiCOLUMNS=14~~(goto)B181~@IRR(0.4,B176..B176)~
A486: U ?/xiCOLUMNS=14~~(goto)B185~@NPV(B183,B176..B176)~
A487: U ?/xiCOLUMNS=14~~(goto)B31B~@IRR(0.5,B313..B313)~
A488: U ?/xiCOLUMNS=14~~(goto)B334~@IRR(0.4,B328..B328)~/xgCLOSEOUT~
A491: U ?/wgra~/rnr~~(home)~/reA337..d500~~

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